The Journal of the Michigan State Medical Society

PUBLISHED UNDER THE DIRECTION OF THE COUNCIL

VOL. VI DETROIT, MICHIGAN, AUGUST, 1907 No. 8

Original Articles

PROPRIETARY INFANT FOODS: THEIR USES AND ABUSES.

THOMAS B. COOLEY, M. D.,
Detroit.

There has been, in the past few years, a decided and most gratifying advance in the methods of adapting fresh cow's milk to the artificial feeding of infants. Not only does the specialist understand better how to vary the proportions of the different copmonents of the milk to meet the needs of the individual case, but the knowledge is better diffused through the ranks of the profession at large; and in America especially the general adoption of the percentage system and the establishment in the large cities of milk laboratories have made it much easier for the practitioner to put his knowledge into effect; while a more general appreciation of the dangers of dirty milk has led, on the whole, to an improvement in the average supply which makes it safer to use. Not withstanding these, and the added fact that fresh milk, modified in some more or less simple manner to meet the digestive capacity of the infant, is the most natural, the most universally available, and by far the cheapest material for artificial feeding, the vogue of the proprietary food stares us in the face in every street car and on every bill-board, and the popular faith in their merits confronts us most unpleasantly in our attempts at rational management of cases of difficult feeding. Without statistics to support me, I cannot venture on too definite statements, but the manufacture of these preparations is certainly a great and enormously profitable industry, nor is there any evidence that their use has been in any way diminished by the progress we have made in the scientific use of milk. Certain of the reasons for this widespread use are sufficiently obvious. The child-like faith of all of us in anything which is loudly and persistently enough advertised is a phenomenon which needs merely to be mentioned, and applies as well to proprietary foods as to patent medicines or to bogus mining stocks. Nor is it at all difficult to understand the desire of parents to avoid the expense incident to prolonged medical care of the child if they can find an apparent escape from their difficulties without it, nor can we expect them to know that what may at first seem like a broad and easy road is more than likely to have its end in a maze almost as perplexing to the physician as to themselves.

*Read before the Wayne County Medical Society, Feb. 18, 1907.

The convenience of preparation of the dried foods as compared with the home modification of milk is also undoubtedly a factor in their popularity with the laity.

These reasons are self-evident, but they are not the only ones, and however reluctant we may be to do so, candor compels us to admit the truth of some others not especially conducive to a feeling of self-satisfaction on the part of our profession. The modification of milk has by no means been reduced to an exact science, no matter how proud we may be of our progress, and the best of the specialists will have failures in his attempts to manage difficult cases with milk alone, while, naturally enough, the less special knowledge the practitioner has the greater will be his troubles and the fewer his successes. Success, too, in many cases follows only after a more or less prolonged period of careful observation and experimentation, during which the parents' patience is sorely tried, and their confidence much shaken. Many physicians, moreover, whether from inexpertness, or a yielding to the desire of the anxious parents to try this or the other "perfect food" on which the neighbor's baby has grown fat, or perhaps from real faith in the value of preparations from which they may have seen striking immediate results, are driven to the use of artificial foods when a little more patience, skill, or firmness might have brought success with the milk; and whatever the ultimate effects may be, the immediate results are often gratifying and impressive to the physician as well as to the parents. Finally, certain text-books to the contrary notwithstanding, it is in my opinion folly to deny that many of these artificial foods have a real value, and that, whether they are stumbled on accidentally by parent or physician, or ordered with a true understanding of their composition and use, some infants certainly thrive for shorter or longer periods upon them as well as one could ask—*because* they meet some definite indication that has been overlooked or not adequately met in the milk feeding.

Now, whether or not the physician is going to use these foods, is certainly of considerable importance, if he is to feed infants, that he have a clear understanding of their nature, composition, and claims to consideration; if for no other reason in order that he may offer to parents an intelligent statement of his reasons for not using them. Our text-book writers, in their enthusiasm over milk modification, and their desire to impart their knowledge of it to the last detail, give the other foods at best but scant consideration. To say, as does one well known book, that the artificial foods are unreliable in composition and wholly useless; that there is no excuse for their employment and that the medical profession is wholly to blame for the popular belief in them, is to me fully as ridiculous as the statement of each and every manufacturer that his is the only perfect food, corresponding chemically exactly to human milk, etc. Between these two extremes are to be found scattered through various books on dietetics, pediatrics and physiological chemistry, more or less complete discussions of certain phases of the matter, which, sought out with considerable labor, pieced together and combined with one's own ideas and experiences, may give one a basis on which to deal with the question. My own failure to find anywhere what I considered an adequate presentation of the matter has led me to endeavor as well as I can, in a brief paper, to collect facts and opinions bearing on this subject and to ascertain the merits of these preparations, and the reasons for and against their use.

It is necessary to say at the start that our knowledge of infant digestion and metabolism is still far from complete

and that although the brilliant researches of Pawlow, Folin and others have added greatly to our general knowledge of these subjects, they have also served to show us how much more complicated these processes are than we once thought, and how much we still have to learn concerning the character of secretion, etc., under varying conditions; and how wide are the opportunities for individual idiosyncrasy; so that positive statements must necessarily be made with caution.

The preparations under discussion divide themselves naturally and logically into two classes—those which are designed and advertised to serve as complete foods in themselves and those meant to be added to fresh milk. The first class is to me the more interesting, though numerically probably the smaller. The foods of which it is comprised are composed essentially of dried or partially dried cow's milk, sometimes with no additions, but usually with substances such as vegetable proteid, various forms of starch, or partially or wholly malted grain. Included in it are the malted milks, such foods as the "Allenbury's" and "Nestle's," certain foreign condensed cream preparations, and I include here also the condensed milks, although they are not, strictly speaking, proprietary infant foods. Before discussing their especial characteristics I wish to state briefly what, in my opinion, are the essentials required of the food for any infant. It must, in the first place, be readily digested by the particular child, must contain in sufficient amount all the substances essential to normal metabolism, must not contain anything especially liable to injurious fermentation in the intestines; and should be of such a nature as to prepare the child ultimately for the digestion of fresh unmodified cow's milk, for satisfactory feeding from the first year on is almost impossible without this. It is not essential that, as has so long been taught, the food should approach as closely as possible to the composition of human milk. This idea has, I believe, been the source of much error in artificial feeding.

Certain objections to the continued use of the dried milk foods are commonly made and very generally credited. These are that they are causes of scurvy and rickets, two diseases which are unfortunately too common, but of whose etiology we know as yet very little. Infantile scurvy is a disease which, like many others, becomes more common the more we know about it and the more carefully we look for it. In milder grades it is not at all rare. It is seen occasionally in infants on the breast, a little more often in those on modified raw milk, but by far the greater proportion of cases occur in children fed on milk which has been peptonized, pasteurized or sterilized, or on the dried foods, so that in general one may say that it increases in frequency the further we get from a natural fresh food. It results evidently from lack of some substance in the food which is essential to normal metabolism, and it would seem that this substance is readily affected by heat. Whatever this still unidentified substance may be, it is rational from clinical observation to conclude that it is absent or diminished in amount in food preparations which are preserved by sterilization or by desiccation. As to rickets, it is not so clear that the dried foods are directly responsible. While rickets is unquestionably a disease of metabolism, its causes are certainly more complex than those of scurvy, and it is not cured, so far as we know, by correcting any one deficiency in food. It occurs quite as well with fresh cow's milk as with the dried foods, and seems on the whole to bear more relation to feeble digestion, improper proportion of food principles, and faulty general hygiene than to artificial foods as such. Some other things commonly ascribed to the

use of proprietary foods—delayed dentition, flabby muscles, etc.—may fairly be said to result from the unwise regulation of any food, but are certainly more common with the proprietary foods, and if we cannot point to a definite lack of any important food element as their cause, the various small differences known to exist between fresh and dried milk, and the lack of flexibility in modification of the prepared foods might well be considered sufficient explanation. Unfortunately, the mischief done by the artificial foods does not always show itself in infancy. It seems fair to say that the child so fed has a lower natural resistance to bacterial infection than the one fed on fresh milk, and during adolescence many more of these children show serious defects in development. Anything like a complete treatment of this question would lead us far into the new work on immunity and the different effects of human milk, cow's milk, and the dried foods on the production of protective bodies in the infant—a subject of which as yet we know little, but concerning which it is probably safe to say that the further we get from the natural food the more will the child be deprived of natural protective influences.

As to the individual constituents of the foods. First in importance are the proteids. It is commonly stated by writers on dietetics, and I believe it to be true, that the casein of dried or partially dried milk is more readily digested and assimilated than that of the fresh milk, though the reasons are not very obvious. It is known to every one who has had occasion to work with these substances in the laboratory that mild heat and partial or complete desiccation bring about, especially in the casein, certain little understood changes, largely physical, but partly, doubtless, chemical, as a result of which, if brought back to solution with the original proportion of water, they no longer behave in the same way toward various reagents, notably rennet. Rennet is one of the bugbears of infant feeding. It is difficult to understand its precise function in the child's digestive processes, but one end for which we always aim in the preparation of a food is to avoid the thick, firm curd that rennet is supposed to form with cow's milk. This end the evaporated foods seem to attain. It is a simple little test-tube experiment to dissolve up a portion of one of them, add it to an acidulated rennet mixture, and compare the result with that obtained with fresh milk. From the dried food is obtained only a small amount of very fine, flocculent coagulum. The susceptibility to rennet has been, therefore, greatly diminished. The importance of this to gastric digestion is readily understood, but I believe that the change goes further. It seems to me that in certain conditions, such as convalescence from acute intestinal indigestion, these dried foods are much less liable to intestinal fermentation, perhaps because the altered physical state of the casein makes it less subject to the action of bacteria. Changes in the lactalbumin we know little about, and I do not believe them to be important. With regard to any alterations in casein that may occur from the action of malt in those foods prepared with malted grain, there is a theory, handed down from the time of Liebig, and still made much of by the manufacturers and some brewers, that malt contains, in addition to diastase, a ferment, the so-called "peptase," having a certain amount of proteolytic action. While this may be so, I know of no good experimental evidence in favor of the theory, and at all events the proteolytic action must be so slight as to be of no practical importance in this connection.

The fats in these foods are commonly much less in proportion to the proteids than in the percentage modifications usually given to young infants, varying

from one-half to one and one-half times the proteid percentage, except in the condensed cream mixtures. While it is usual for the manufacturers to claim that their foods represent mother's milk exactly, or approximately in composition, I am very much inclined to think that they owe a certain amount of success to the fact that in their fat content they vary from it so far. It is becoming daily more evident that the feeding of fats to infants has been a good deal overdone, and that the effort to increase the fats to the utmost possible limit has led to many failures in feeding. This is particularly true in cases of feeble digestion, and of convalescence after acute enteritis, and although the dried milk foods are seldom given for this special reason I have no doubt that the good results obtained from their temporary use in these conditons is largely due to the low fat percentage. In most of the dried preparations the fat emulsion is not particularly well preserved, and unless the food is taken immediately after mixing, or very thoroughly shaken, a part of the fat is likely to separate out in clumps. Another part of the fat is said by some of the analysts to become "occluded," that is, to enter into some such physical combination with the proteids as not to be readily separated by the ordinary methods of analysis. We lack definite metabolism experiments as to the amount of this fat which is absorbed, but I am inclined to think that a good deal goes through unchanged. The condensed cream, or centrifugated cream preparations, serve a useful purpose abroad in increasing the fat in home modification, and Biedert's Ramogen is furthermore a thoroughly ethical preparation.

The carbohydrates in this class of foods are various. In the unsweetened condensed milks and creams there is nothing but lactose; in the sweetened preparations an amount of cane sugar equal to the total solids in the milk is added. This very high percentage of cane sugar renders the sweetened milks theoretically undesirable for infant feeding, but in practice they are sometimes much more palatable to the child, and in many cases the excess of sugar does not seem to produce any ill results. The malted foods contain, in addition to the lactose of the milk, maltose and dextrin, and unchanged starch when the malt has not been allowed to complete its action. These malted foods all seem to be results of attempts to make a condensed form of Liebig's malt soup, which once had a great vogue in Germany, and, with some modifications introduced by Keller at the Breslau clinic, is still much used. Malt soup consists essentially of milk, flour, and malt extract cooked up together, and is unquestionably a useful food. I have already expressed my doubt as to any effect of malt on the casein, but the maltose resulting from the action on the flour, being a readily assimilable sugar, and having moreover a laxative tendency, is of considerable service in many cases, particularly where troublesome constipation is a factor. The effect of cooking with starch on the casein and lactalbumin, in partially coagulating them, and leaving them in a starchy suspension, is to make a finer curd in the stomach. The presence of maltose in the dried food would seem to be of value only for its laxative effect, and occasionally for its easy digestibility if lactose is not readily digested. Dextrin, often present in the dried goods, is a partially predigested, soluble starch, which enjoys the reputation of being a source of fat to the infant, which in a sense it probably is. It is a common observation, however, that infants who grow fat on a food low in fat and high in sugars and dextrins have a flabby, unhealthy appearance, and seldom do well for any length of time. As to the unchanged starch, it is a desirable addition

to the diet of infants after the sixth month, to prepare them for solid food later. It has been used a good deal in the form of various gruels in the diet of younger infants who suffered from colic, and on two grounds; first, that it prevents mechanically the formation of large curds in the stomach; and, second, that it protects the proteids from bacterial fermentation in the intestines. This action is not especially needed in the dried milk foods; very little starch is digested by the infant under five months, and its prolonged use is sometimes followed by chronic intestinal disturbance. It is not, therefore, a desirable addition to the food in the early months, except to meet special indications in the modification of fresh cow's milk. I have omitted from consideration here some preparations of dried peptonized or partially peptonized milk, peptones, etc., which are not especially intended for infant feeding. In general, I believe that the best of these dried milk foods are prepared from fairly clean pasteurized milk under the direction of competent chemists, and that they are fairly uniform in composition. I am very decidedly of the opinion that no one of them is fit for prolonged feeding to any infant, and that the physician who uses them for that purpose is taking chances of producing a serious disturbance of nutrition. It cannot be denied that children do occasionally flourish on them, but the percentage of failures is far higher than with modified fresh milk. With sodium citrate, whey mixtures, buttermilk, skim milk, etc., the skilful practitioner is able to meet the indications in almost every case with fresh food, and in the rare case where fresh milk modification definitely fails, the only safe and satisfactory refuge is the wet nurse. Foods of this class have their uses, however, as a temporary recourse in the convalescence from acute intestinal disturbances, in some cases of gastric irritability (a not uncommon result in too much fat) and at times when fresh milk is not obtainable, as on shipboard. As a rule the dried foods are no better than the cheaper condensed milk, if as good; but they may be of service in meeting special conditions, and then should be selected according to their composition—those poor in fat when fat digestion is weak, etc.

Foods intended to mix with fresh milk. There is a very large number of preparations that come under this heading, all of which are intended to meet some one or more of the common indications in the modification of milk, and they vary in popularity and success largely in accordance with how common these indications are, and how well they meet them. Those which are not intended to be cooked with the milk are not open to the general objection applicable to the milk foods, of being lacking in the anti-scorbutic element, whatever that may be. If they are mixed with a milk properly modified, with due regard to the content of the food itself, they should not contribute to the development of rickets. Most of them, however, are intended for use by the mother, without a physican's supervision, and are sent out with directions aimed to make the process as easy and simple as possible, consequently the mixture is likely to be proper only for the average, healthy child, who could get along just as well on a plain milk modification. These foods are all composed of grains or flours treated in various ways, and the essential component is the carbohydrate. It is very doubtful whether the very small amount of added proteid in such a food as Eskay's is of any importance. One group in this class is intended, when mixed with milk, to make something corresponding to the malted soups of which I have spoken before. A very widely used preparation—perhaps the most popular of all in this country—is prac-

tically nothing but a dried malt extract, containing no unchanged starch and no active enzyme. It is mixed with uncooked milk and has no virtue beyond the effects of the dextrin and maltose of which it is almost wholly composed. Others contain active malt and starch, and are intended to be cooked with milk. They would make a true malt soup. Another group is made up of more or less finely ground meals, dextrinised by baking. They contain large percentages of unchanged starch, and depend chiefly upon it for their intended action, which is to lesse nthe size of the curds. Still a third group consists of finely ground (sometimes by patent processes) undextrinised meals. The starches are not desirable additions to the food of the average infant, and should be used only when there is a digestive disturbance which obviously indicates them. Sodium citrate, alkali, or even common salt, will meet these same indications in most cases, and will not occasion the disturbances which may follow the giving of starch to the young infant. Detrinised meals are expensive, unnecessary and often harmful additions to the food in early months. Later they serve a purpose in accustoming the child to starch, which is probably quite as well, and much more cheaply met by gruels made from grains of flour. The dextrinised meals have a use in tiding over a period when we do not wish to feed milk and yet do not desire altogether to starve the infant. As with the flours, it makes some difference in particular cases whether they are made from grains whose tendency is laxative or constipating.

There is no preparation in this class which seems in any way to be a desirable permanent addition to the food of the average young infant.

I have attempted thus briefly to present the nature of these preparations, and have endeavored to be as fair as possible without discussing individual examples; but I confess that I may have been in some degree unjust in classing certain products together where there is a great difference in the care, cleanliness, and skill with which they are made. These points, naturally, I cannot take up here, and must leave to the persuasive manufacturer's agent. Good analyses are to be found in the recent editions of books on dietetics, while the older ones are often wrong on the fat percentage.

I wish now to consider certain misuses of these foods which seem to me to be common. Abuses by the laity perhaps need no special treatment. It is altogether too frequent that a mother tries to bring up her baby on some proprietary food on which another baby, perhaps under a physician's orders, apparently did well, and the results are usually sooner or later disastrous. Such things are, however, the result of perfectly excusable ignorance. Nurses, especially the old style of obstetric nurse, are more to blame. It seems to be so fixed a habit with many of these to put every child they get a chance at on some pet proprietary food that one might well suppose they receive a commission from the manufacturer. While this sort of a thing may be pardoned in parents, and partially excused in nurses, there is no excuse for ignorance on the part of the physician who undertakes to feed infants at all. Nevertheless, with increasing experience, I am the more convinced that the greater number of physicians who order these foods do so with little if any notion of what the indications are that they want the food to meet, or what there is in the food to meet the indications. This is certainly true of those who order the same food in almost every case, for there is no one of them that meets adequately any great variety of indications. Moreover, there are many who, having weaned a child,

for good or bad (and too often bad) reasons, will put it immediately on a proprietary food without having given fresh milk even a trial. It seems to me particularly foolish, or worse, to make anything like a regular practice of ordering any proprietary food in polyclinic work—especially those to be added to fresh milk. The dried milk foods are relatively less expensive, and are practically sterile, so that there might be some excuse for their occasional use in such a practice; but to impose upon the poor, in addition to the cost of the milk, an additional and usually wholly unnecessary expense is surely wrong; moreover, it helps to spread the idea that these things are desirable or necessary for successful artificial feeding. I have no quarrel with the physician who, under special conditions, orders a proprietary food for temporary use with a very definite idea of its composition and what he expects its constituents to accomplish, and can only disagree with him if after due and intelligent consideration he thinks best to use it as a permanent food, but I think it as wrong to use them without knowledge or discrimination as it would be to use drugs in the same way.

Another objection to the use of certain of these preparations is based on ethical considerations. It would, I suppose, be hardly fair to ask that the manufacturers of food products be held to the same standards that we exact, or try to exact, of the makers of pharmaceuticals, and a reasonable amount of proper advertising cannot be complained of. The advertising methods of certain of these manufacturers are, however, so objectionable as in my opinion to preclude the use of their products by any self-respecting physician for any but very special reasons. I think that few in the profession will disagree with me when I say that the artificial feeding of the infant, and particularly the management of all difficult cases, is properly the function of the physician. Some manufacturing firms respect this fact and confine their advertising almost wholly to the profession. Others make every effort to eliminate the physician from the field, while a third class, like certain makers of more or less notorious pharmaceutical compounds, combine legitimate representations to the profession with decidedly improper methods of general advertising. The ways of newspaper, magazine, and bill-board advertising indulged in by these people are common knowledge, but I doubt whether it is so generally known to what extent mail advertising to the laity is carried. One firm, for instance, which makes a variety of preparations other than its infant foods, and has enjoyed a very good reputation with physicians, (its foods being, by the way, among the very best on the market) keeps itself informed through clipping bureaus of all births within the territory it aims to cover, and sends to the mother in each case samples of food and a pamphlet purporting to give full instructions for infant feeding and management which is full of misleading statements, beginning with the one that these foods are a "true substitute for mother's milk." Another firm, makers of one of the most popular malted grain preparations, not only sends such a pamphlet to all the mothers, but follows it up with occasional letters, offering, if the infant is having special digestive troubles, to send directions for remedying them on receiving a description of the case. I ran across a case recently where this food had been ordered for temporary use by a physician, and the mother had been receiving such letters ever since. Surely such methods can hardly be considered reputable, and I am glad to say that there are makers of good products who do not follow them. I admit cheerfully that it is sometimes very convenient, though not really necessary, to use one of these foods, but I think that to avoid

stultifying ourselves, we should know, and should explain to parents, what they are and why we use them.

Another and very important argument against the indiscriminate use of proprietary foods is their cost. The best of the malted milks which is, I think, the cheapest of the really good dried milk foods, costs from 18 to 25 cents for the amount needed by a 10-pound baby in a day. The popular malted grain preparation referred to will cost at least 10 cents a day, in addition to the cost of the milk, for enough to make a 6% sugar modification for an infant of the same weight. This consideration, in addition to the objectionable advertising, makes it desirable to know what cheaper articles there are which meet the same indications as the proprietary preparations. Good unsweetened condensed milk, as I have said, is for most purposes as good as the dried milk foods. Fresh buttermilk, where obtainable, is of great assistance when we wish to feed little or no fat, as is also skim milk plain or treated with the lactic acid bacteria preparations, though these are not easy to use. The dried malt extracts are more expensive than the easily obtained syrupy preparations made by the brewers, and still cheaper and quite practical is it to obtain malt itself from the brewery and make a decoction of it. Malt soups may be prepared in either of these ways. A substance not often used in infant feeding is strained honey. It contains about 70% of invert sugar, which, in addition to being really predigested, serves very much the same purposes as maltose and dextrin, and costs from 1-4 to 1-3 as much. There is a wide range of choice in the dextrinised foods regarding both composition and price. There seems to me to be so little necessity for their use, with our present knowledge of milk modification, that we need not concern ourselves with them especially. If they are to be used, it is well to know from what grains they are made. The prepared flours are not objectionable on the advertising score. There is now a considerable variety of good ones to be obtained, though only one or two are common in the market. It is cheaper, and fully as good, though less convenient, to make gruels out of the whole or broken grains by longer cooking.

This paper makes no pretense to cover all the aspects of a complex subject, but I hope that it may arouse some interest in what has seemed to me a neglected field. The way in which proprietary foods are used by the laity reflects to a degree a lack of confidence in the profession which should be a reproach to us and a convincing argument for more general study of the principles and practice of scientific infant feeding.

A. MacLaren, St. Paul, Minn. (*Journal A. M. A.*, July 20), says the laity and even some medical men hardly realize the ever present danger of leaving foreign bodies within the peritoneal cavity. He doubts whether any of the many methods recomended to avoid this danger is as good as the use of the present five or ten yard gauze sponge which he trusts is now used by every one for the abdominal tamponade. The use of the long-handled hemostatic forceps also materially decreases the danger and they should always be used in preference to small forceps. The peritoneum has developed a hitherto unknown property of forcing foreign bodies into the intestine, since the sterilized gauze sponge has generally replaced the sea sponge formerly used and he reports two cases of his own observation, in one of which a piece of gauze was passed through the rectum, another in which a forceps was found entirely within the small intestine. One other case also reported of death following the leaving of a tape sponge in the abdomen. He refers to a conversation with Dr. Maurice Richardson in which the latter said that he had on several occasions removed foreign bodies left in previous laparotomies by other surgeons, and to the best of his knowledge the patients were never informed of the facts. We are all aware, MacLaren says, that this excellent rule is not always followed by surgeons of equal standing. In conclusion he mentions some experience he has had with catgut sutures in appendectomy which has convinced him of the danger of such material for intestinal suture when used alone.

THE TREATMENT OF ARTHRITIS BY LOCALIZED PASSIVE HYPEREMIA (BIER'S STASIS)*

FRANK SMITHIES, M. D.,
Instructor in Medicine, University of Michigan, Ann Arbor.

(From the Clinic of Internal Medicine, University Hospital.)

Hyperemia is increase of blood to a part. It may be local or general. Either form may be active or arterial; passive or venous or mixed. In any event, the results are increased vascularity, more blood cells and greater fluid content in the parts involved. Relief of any form of hyperemia is followed by more or less rapid relief of the congestion of vascular and peri-vascular structures. When peri-vascular structures are relieved, we say that "absorption" has taken place. Formerly, this was thought to take place through the lymphatics. It has lately been shown that it takes place through the capillaries, and, of these, the venous radicles play the greater part. Obstruction to the venous circulation causes, primarily, more engorgement to any part than does excess of arterial inflow. This passive stasis, if long maintained, brings about the deleterious condition known as edema; if maintained for a shorter time, it is followed by increased arterial inflow and greater absorption. It has then, a favorable influence upon the affected areas, inasmuch as the progress of any tissue normally, or, if pathological, towards the normal, depends upon its nutrition, and this nutrition is maintained by corpuscular elements and serum. The more of these elements carried to a given part in a given time, the greater the exchange of tissue-building material and the carrying off of waste products. In case of infective processes, more protective bodies are available.

As a therapeutic measure, the beneficial effects of excess of blood to a part have been long known. Animals suck their wounds with resultant rapid healing. The ancients used hot cauteries with free hand. Hippocrates speaks favorably of the hot bath. A long list of those engaged in the healing art, testifies to the benefits derived from hot packs, compresses, poultices, and irritant medicinal applications. These are all measures for promoting active or arterial hyperemia.

Definite knowledge of the value of venous or passive hyperemia has but recently become known. It remained for Prof. A. Bier, of Griefswald, Germany, to demonstrate the importance of passive stasis. With Rokitansky, he had noticed that pulmonary tuberculosis rarely occurred in connection with disease of the mitral valve. This appeared to be especially true of stenosis. On the other hand, when stenosis of the pulmonary semi-lunars was present, a very large percentage of the cases were affected with pulmonary tuberculosis. The backing-up of blood in left-sided lesions, with resultant congestion of the lungs,

*Read before the Medical Section of the Michigan State Medical Society at Saginaw, May 15-16, 1907, and approved for publication by the Publication Committee.

appeared in some way to exert a protective influence. Bier began to make observations on cases in which he produced artificially, and usually, locally, venous stasis. He effected the stasis by means of constricting bandages, applied proximally to the part that he wished to treat. His first cases were patients affected with various forms of joint tuberculosis. In many of them Bier noted rapid relief from pain, lessening of joint stiffness, marked decrease in inflammatory reaction, and healing in a very short time. The artificial retardation of the circulation appeared to render less harmful the bacteria and their products. The excess of nutriment constantly at hand did much to prevent necroses. The physiological action of the healing factors at work brought

FIG. 1—Arrangement of supporting and protective bandages previous to application of constriction bandage, for passive hyperemia of knee joint.

FIG. 2—Incorrect method of applying rubber constriction bandage—i. e., as Esmarch in amputations.

about the greatest good with the least disturbance of tissue function. Just how the process was effective, Bier could not entirely explain. He ventured to point out that the relief from pain might easily result from the congestion of the irritated nerve endings by the abundant exudates—as in Schleich's method of infiltration anesthesia. The bactericidal effects of the localized congestion have been explained in many ways. Dilution of the toxins; increase in the carbonic acid and the alkalies in the blood and lymph in the part being treated, increase in the number of leukocytes in the part, with increase in the alexins and greater phagocytosis were all thought, variously, to be factors at work. More recently, increased opsonic power of the serum, in the congested area, has been suggested.

Bier used his method for some ten years before making known his results. In that time, he had tested its efficacy on almost all forms of bone and joint disease. In 1903 he published the results of his findings. Up to that time, he had employed the localized hyperemia largely for chronic processes,—infective and non-infective. More recently, he with other workers, has enlarged the scope of his work, and at present, a large experience testifies to the efficacy of the method in the treatment of both chronic and acute pathological processes, whether these be infectious or non-infectious. The different pathological conditions are, however, managed by varying the method of applying the constricting bandages.

In our experience, passive hyperemia has proven a valuable adjunct to the therapy of many inflammatory conditions. We wish to speak briefly of the results achieved in cases of arthritis. Before mentioning specific cases, it may be advisable to review certain facts concerning the application of the method.

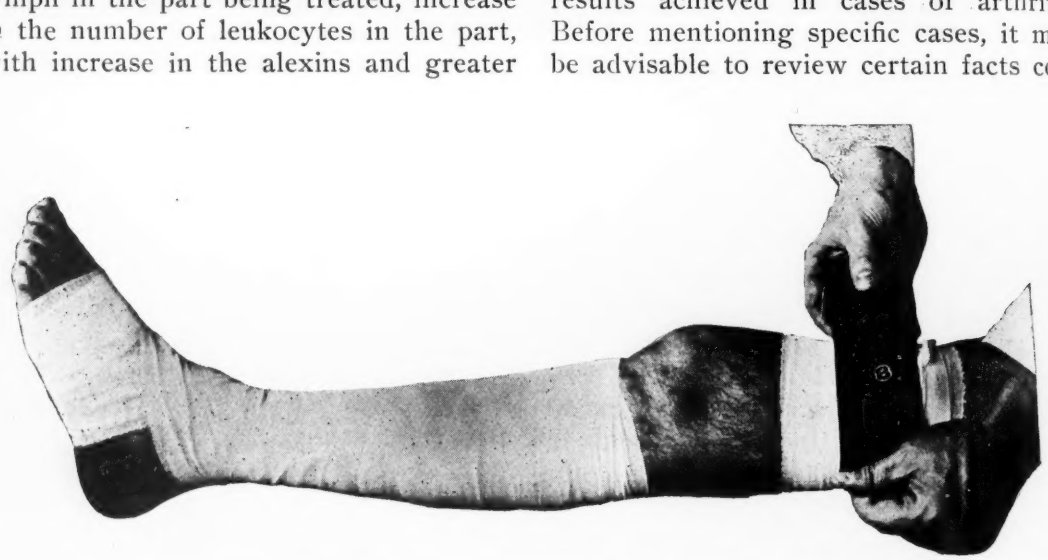


FIG. 3—Correct method for applying rubber constriction bandage—i. e., as ordinary roller-bandage is applied.

Materials Needed.

Venous hyperemia is produced only by constriction. On that account, it can be produced only in the extremities, and, to a certain extent, in the head. Partial or mixed hyperemia is produced by means of specially devised, cup-like vessels, provided with an arrangement whereby vacua may be produced at will in such vessels. A suction is thus established.

For constriction, we have found that bandages of strong, rubber-tissue are the most serviceable. They vary in width,

from one to three inches, and in length, from one to three feet. They are easily applied, produce an adequate degree of constriction, and are reasonably cheap. Bandages of rubber-webbing are sometimes used. They are more expensive than are those of tissue, and do not appear to have any additional advantages beyond, perhaps, greater durability. We have found that the constricting bandages could be better applied and better kept in position by fixing a strip of ordinary cotton-roller at one end of the rubber strip. This can be wrapped about the limb as an ordinary roller after the constricting bandage has been applied.

FIG. 4—Appearance of leg and bandages when proper technique has been carried out.

Method of Application.

This varies somewhat with the location of the part in which localized stasis is to be brought about. We will consider that the knee-joint is to be treated. It is best to have the patient in bed, or if not in bed, to have the leg slightly elevated. To support the peripheral circulation, and to better localize the stasis, a moderately stout cotton roller is applied to the foot and leg from below upwards. It should fit fairly snugly, and should be carried almost to the knee. Proximal to the joint, a few turns of soft gauze bandage are applied loosely. This is for the purpose of protecting the part over which the rubber-bandage is to be applied. The leg is now ready for the application of the constricting bandage. This should not be put on as one uses an Esmarch for constriction in amputations. This causes too much constriction, and it is impossible to get the bandage applied with perfect smoothness. It is best to apply the rubber bandage just as one applies an ordinary roller. When applied, there should be no wrinkles in the bandage, nor should the patient complain of discomfort from it. The degree of constriction varies with the kind of process being treated. In general, in chronic and sub-acute conditions, moderate constriction is maintained for short periods. In acute processes, mild constriction is maintained for many hours. In any event, the degree is to be judged entirely by the nature of the case.

The Bandage is Properly Applied When:

(a) There is no pain caused by the constricting band, either locally or beyond the area involved.

(b) The congested area feels warm to the hand.

(c) The arterial pulse can be felt beyond the constriction.

(d) The congested area is uniformly purplish blue—in cases where the constriction is to be maintained for an hour

or two, viz.: chronic affections—and diffuse, fiery-red in acute affections where mild constriction is to be long maintained.

(e) There is no pain in the congested area, no loss of sensation, no numbness distally.

(f) Edema, as shown by pitting on pressure, does not occur.

Errors in technique consist in:

a) The use of other than elastic bandages for constriction, with injury to the soft parts, and perhaps, blood-vessels. (The constricting bandages may be too narrow or of very strong material.)

(b) Failure to properly protect the underlying tissues by the application of the preliminary gauze roller.

(c) Failure to apply peripherally to the area in which localized hyperemia is desired, the supporting cotton roller. This may be applied too firmly.

(d) Improper position of the part. The limb should be fully extended, and should be slightly elevated, or at least level. It must never be allowed to hang down.

(e) Failure to appreciate the condition to be treated, with resultant improper degree of constriction, or the maintenance of the constriction for too long or too short a time.

The time element and its importance.

One must realize at the outset that no definite rules can be laid down for the application of passive hyperemia. Each patient is to be considered as a separate problem. What may be therapeutically efficient for one patient, may be injurious for another. In general, we may say that chronic affections—as arthritis deformans, joint tuberculosis, chronic rheumatism, etc.—require fairly strong constriction maintained for from one-half to two or three hours. It is best to begin by maintaining the stasis for a short time, and gradually increasing the period. In acute affections:—acute gonorrheal arthritis, rheumatic fever, sprains—the constriction should be mild, and maintained constantly for from ten to twenty hours—or almost continuously for many days. In these cases, the tendency appears to be towards not maintaining the stasis sufficiently long. The first application of the bandages must always be made by a competent attendant. Under no circumstances must the work be done entirely by the patient. Competent supervision is necessary to insure success. Any other method than this will lead to failure, loss of faith in the procedure, and sometimes injury to the patient. I find that this is not al-

FIG. 5—Constriction bandage improperly applied—too tight and wrinkled. (Note oedematous condition of knee and dilated veins.)

ways appreciated, either by doctor or patient. Patients frequently feel that they themselves are able to gauge the degree of constriction and the time of its maintenance. Many feel that if a little stasis is a good thing, then so simple and so cheap a remedy can surely be used with freer hand than the physician is willing to allow. This always leads to unsatisfactory results.

After-treatment.

At the expiration of the proper period of constriction, the bandages are removed, and in chronic and sub-acute cases, the part is immediately massaged with warm olive oil. This aids in the active arterial hyperemia which supervenes. The massage should be from the periphery. In acute cases, if performed at all, it should be very gentle. In chronic cases, the massage can be combined with passive movements. After the massage—which should be persisted in for about fifteen minutes—the affected part should be wrapped in cotton, slightly elevated and kept quiet for an hour.

FIG. 6—Appearance of knee after stasis has been maintained for two hours. (Note absence of ecchymoses, or dilated veins.)

Beneficial effects of stasis.

(a) Relief of pain in the joint. This is especially the case in acute processes—rheumatism, gonorrheal arthritis, bursitis, sprains. It is frequently astonishingly rapid. It is usually dependent upon the time that the constriction is maintained, and its degree. Freedom from pain may be permanent. Its recurrence is frequently an indication for a longer maintenance of the stasis.

(b) Decrease in the local inflammatory signs, as shown by decrease in swelling, in tenderness, in temperature and by increase in range and ease of motion in the joint. These effects are frequently permanent, provided the stasis is properly maintained. In cases of effusion into joint capsules we have seen the entire effusion absorbed in a day or two.

(c) Increase in movement, with decrease in crepitus. In cases of arthritis deformans and chronic articular rheumatism, this is often strikingly apparent. In some cases, it seems that actual absorption of exuberant processes takes place.

(d) Decrease in the discharge in cases of tuberculosis. In many instances, this is followed by rapid closure of sinuses, with complete healing.

(e) Disappearance of muscle and tendon soreness and stiffness. This applies to both acute and chronic processes.

Deleterious effects of stasis.

These usually result from improper application of the constriction or its

maintenance for too long a period. Failure to appreciate the physical condition of the patient is responsible for some of the untoward effects. Gangrene has been the result, with some operators, due to strong constriction, or constriction whose time of maintenance was left to the patient. This has been especially so in cases of diabetes. In anemic individuals, we have seen troublesome edema persist for some days after but shortly maintained stasis. Severe peripheral neuritis occasionally follows prolonged treatment of chronic joints. Temporary loss of sensation may sometimes be noted. Moderate cutaneous ecchymoses may follow and persist for some time.

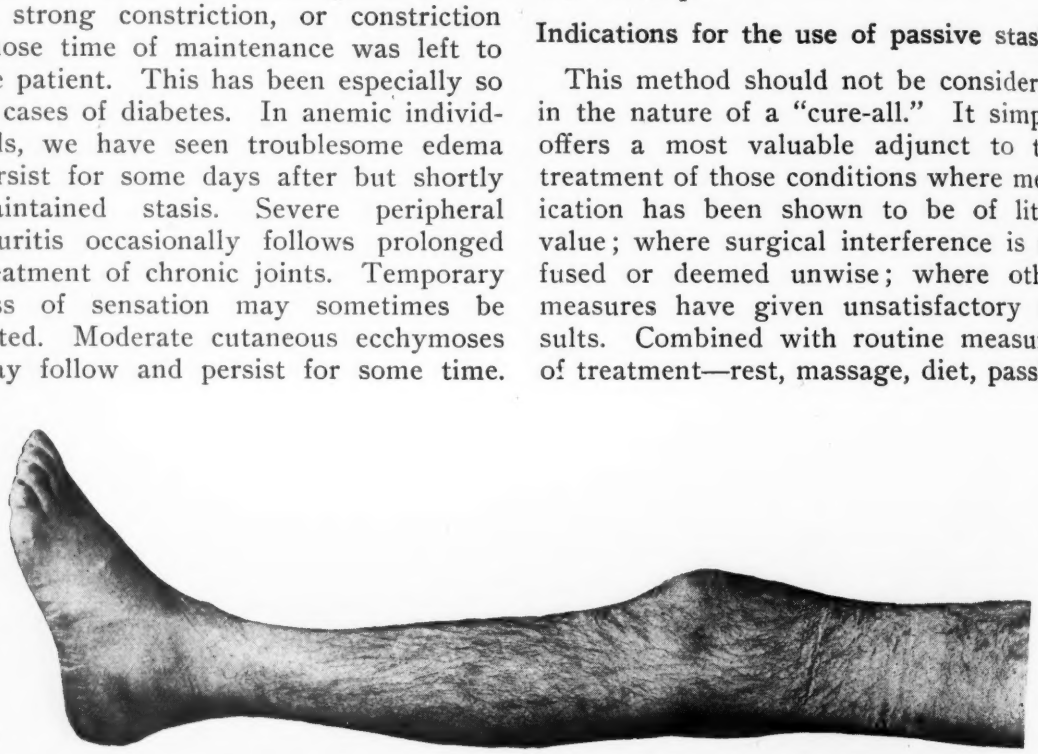


FIG. 7—Appearance of knee a few minutes after constriction bandage and accessory bandages have been removed. (Note rapid return of proper circulation in part being treated.)

In cases which are acutely infectious, with much pus, a general infection may follow stasis. Sometimes one sees cases in which the resistance of the tissues appears to be permanently lowered and the pathologic process spreads. In these cases, there has been, usually, some error in technique.

Contraindications to the use of passive stasis.

(a) Extensive arterio-sclerosis; chronic cardiac affections.

(b) Chronic nephritis; amyloid disease.

(c) Diabetes.

(d) Severe cachexia—from chronic pulmonary tuberculosis; carcinoma, pernicious or severe simple anemia, etc.

(e) Old age, childhood and infancy.

(f) Acute infectious processes, with much free pus.

Indications for the use of passive stasis.

This method should not be considered in the nature of a "cure-all." It simply offers a most valuable adjunct to the treatment of those conditions where medication has been shown to be of little value; where surgical interference is refused or deemed unwise; where other measures have given unsatisfactory results. Combined with routine measures of treatment—rest, massage, diet, passive movements, baths, etc.—it has, in our experience, proven of great service. The following cases show some of the conditions in which the exhibition of passive stasis has resulted in benefit to the patients:

Case 1.—Student, male, aged 21. *Diagnosis: Acute, specific (?) arthritis of left ankle.* Patient cannot walk on account of pain, swelling, and tenderness in ankle joint. Examination reveals redness, edema of moderate extent, limited motion, extreme tenderness. Moderate stasis applied for several hours. Relief of pain almost immediate; swelling had entirely disappeared in two days; range of motion greatly increased; tenderness much decreased. Stasis was then applied for two hours, twice daily and patient kept

off his feet. Complete recovery in three weeks. No recurrence after six months.

Case 2.—Male, farmer, aged 40. *Diagnosis: Chronic, progressive, arthritis deformans,* involving both ankles, knees, slightly, both hands and wrists, both elbows, both shoulders, slightly. (History of gonorrhea nine years previous to patient's entering hospital.) All motions in joints involved markedly limited. Patient cannot dress without assistance. Moderate edema, tenderness and pain on movement in involved joints. Bier's stasis applied successively for one hour, with moderate constriction, twice daily. In three days, pain on movement, swelling, tenderness on pressure had disappeared. Motion had become rather freer. Time of constriction was gradually increased to two hours, twice daily. Patient was discharged, improved in every way, at the end of three weeks. In all joints treated, motion was greater, pain had disappeared, there was no tenderness, no crepitus. The patient could dress himself, and showed marked improvement in his walking.

Case 3.—Male, student, aged 19. *Diagnosis: Acute, gonorrheal arthritis,* affecting both knees; marked effusion. Patient comes to hospital on crutches. Knees greatly swollen; joint capsule very much distended with fluid, very painful to touch. Motion greatly limited, and extremely painful. Local temperature elevated. Treatment: Exploratory aspiration both knee joint capsules; Bier's stasis, with mild constriction for several hours, twice daily; rest in bed. Patient improved steadily; edema disappeared from joint in four days; pain disappeared in a few hours, but recurred when bandages were removed. In a week's time, swelling had almost left, there was no pain on movement; movement was almost normal; there was but slight tenderness on pressure. The time of stasis was increased to four hours twice daily, but this resulted in return of some of the effusion into the joint capsule. Stasis was discontinued, and the joint baked in an electric oven. The edema disappeared in two or three days. The patient then felt so well that, against orders, he walked about. Effusion returned, but disappeared with application of mild constriction for two hours twice a day. This happened several times. Patient was discharged at the end of nine weeks apparently cured. Writes that since leaving the hospital, he has had no return of the trouble.

Case 4.—Male, farmer, aged 25. *Diagnosis: Sub-acute, gonorrheal arthritis,* both ankles. Affected joints moderately swollen, motion limited, slight crepitus. Patient walks with great difficulty. Treatment: Rest, elevation; passive stasis for two hours twice daily, with moderate constriction. Pain had disappeared within twenty-four hours; swelling was absent at the end of four days; motion in all directions gradually became much freer. Patient left at the end of the eleventh day of treatment. He was able to get about much better, had no pain on doing so. There was slight swelling of the soft parts about the ankles, on account of his being on his feet for last two days in hospital, against advice.

Case 5.—Female, aged 28. *Diagnosis: Chronic, progressive arthritis deformans,* of high degree, involving almost every joint, especially the ankles, knees, hips, fingers, wrists, elbows. Marked tenderness, swelling, limited motion, crepitus over all joints, particularly ankles, knees, elbows, fingers. Patient cannot move about in bed, unaided; cannot feed herself, cannot hold articles in fingers. Is much emaciated and moderately anemic. Patient treated by passive hyperemia, beginning with moderate constriction for one hour, twice daily; arsenic exhibited. Pain and swelling had all disappeared at the end of one week; motion had become rather freer and less crepitus was noted. Patient was able to feed herself and could turn in bed. At the end of a month, there was no pain or joint tenderness whatever; the patient could sit up in a chair, could comb her hair; all movements had increased more than 25 per cent. In this case, persistent edema of the left ankle occurred after stasis had been regularly continued a month. It was relieved by baking the involved parts, and leaving off the bandage for a week. After the first month, the time of application of the constricting bandages was increased to two hours twice daily, with evident benefit to the patient. At the end of four months, the patient was discharged at her own request. She could almost stand alone, could get about very well in a roller-chair, could sew, knit, make her toilet, feed herself, and take a bath without assistance. There was no joint swelling or tenderness, and in the case of the knee and elbow joints, movement had been increased at least 50 per cent.

Case 6.—Male, salesman, aged 56. *Diagnosis: Chronic Arthritis deformans*—tuberculous?—left

knee, with *mild arthritis*—tuberculous?—both shoulder joints; "floating cartilage" in left knee joint. There is great swelling, tenderness, limited motion, crepitus of left knee. Treatment: Rest, elevation; removal of loose cartilage; passive hyperemia of left knee for two hours twice daily; shoulders baked. Patient made a slow but gradual recovery. Removal of the loose cartilage caused some acute symptoms in knee, but they were removed by application of stasis. Patient left hospital able to walk very well with aid of cane, and fairly well without the cane. There was slight flexion of the left leg at the knee. Patient could move leg very freely; there was no tenderness or swelling; there was only slight edema about the knee after the patient had walked about for several hours.

My thanks are due to Prof. Dock for many suggestions, and to Mr. A. A. Hale for the excellent photographs.

BIBLIOGRAPHY

Bier, A.: Esmarch's Festschrift, 1893; Muenchener Med. Wochenschr., 1904, et seq.
Bum: Muenchener Med. Woch., 1904.
Breuer: Medical Record, N. Y., 1906.
Derlin: Muench. Med. Woch., 1905.
De Gaulejac: Presse Medicale, 1906.
Hirsch: Berliner Klin. Woch., 1905.
Habs: Wien. Klin. Rundschau, 1905.
Helferich: Archiv. f. Klin. Chir., 1887.
Henle: Beitrage z. klin. Chir., Vol. 20.
Kaefer: Zentralblatt f. Chirugie, 1906.
Klapp: Muenchener Med. Woch., 1905.
Laqucur: Berlin, klin. Woch., 1904.
Noetzel: Archiv. f. klin. Chir, 1900, Vol. 60.
Sick: Muenchener Med. Woch., 1905.
Beer: Medical Record, N. Y., 1905.
Adams: N. Y. Med. Journal, Aug., 1906.
Allan: New Orleans Med. Journ., Oct., 1906.
Bradford: Boston Med. & Surg. Journ., June, 1906.
Codman: Ibid., Oct., 1906.
Ewart: Lancet, Jan., 1906.
Hartwell: Boston Med. & Surg. Journal, May, 1906.
Hoppe: Muenchener Med. Woch., liii, No. 40.
Jacoby: Berl. klin. Woch. xliii, 26.
Klapp: Zeltralblatt f. aerzliche Fortbildung, No. 79.
Muck: Progress of Medicine, Vol. vii, No. 4.
Vandeveer: Albany Med. Annals, Dec., 1906.
Berry: Ibid., March, 1907.

DISCUSSION.

Dr. A. W. Hornbogen, Marquette, said he had used the method in a great variety of cases. He had found it especially useful in wounds of the extremities. In a case of compound comminuted fracture he applied the treatment and converted it into a simple fracture. In cases of felon and streptococcus infection of the fingers it is a great aid. He advised a cautious use at first where bone is seriously damaged

He said that five weeks ago he was at death's door from septic infection contracted during an operation. He believes that Bier's treatment saved his life.

Dr. George Dock, Ann Arbor, said that in Bier's method we have one of the most useful aids in the treatment of chronic joint affections.

Graham Lusk, New York City (*Journal A. M. A.,* July 20), calls attention to the importance of a correct understanding by physicans of the food requirements of the body, especially the proteid and fuel requirements. He points out the false claims made for the advertised breakfast foods, the merits of which lie in their flavors and not in their exaggerated nutritious value. The various malt extracts are also mentioned as well as the peptone preparations, which consist chiefly of albumoses which are liable to cause diarrhea, and the liquid peptonoids which contain a considerable quantity of alcohol and only about 25 grams of proteid to the pint bottle. It is said that many patients have died of proteid starvation through the ill advised administration of these preparations. If used as a flavor or stimulant their limitations should be fully recognized.

Previous experiments by R. Hunt, Washington, D. C. (*Journal A. M. A.,* July 20), demonstrated marked resistance to acetonitrile on the part of mice when fed on small amounts of thyroid. Further studies show that this is an exceedingly delicate test for thyroid. It has been possible to detect as little as one milligram of thyroid. It seems probable that this test will throw light on the question whether there is an excess of thyroid secretion in the blood in exophthalmic goiter. Two series of experiments are described showing the effect of feeding blood from an individual having an exophthalmic goiter.

THE FUTURE HYGIENE*

MORTIMER WILLSON, M. D.,
Port Huron.

Thousands of trained experimenters in physiology and pathology are working diligently to find out the laws that govern the biochemical reactions of the tissues and blood of the human body. The blood plasma which was once regarded as simply a menstruum to convey the blood cells, is now known to be a most complex substance, containing elements of the utmost importance to the maintenance of that balance of action and reaction which we call health.

If we simply mention serum therapy, the mind runs over a realm so extensive, and so unexplored in great areas, that we are bewildered by the achievements already made, and by the promise of future triumphs. Immunity vaccines are multiplying, the protozoon factors of disease are being brought to light, and the possibility of their destruction by medicines or curative sera is being vigorously investigated.

In these labors and triumphs we all rejoice from afar. They are to be done by specialists trained in the details of laboratory work, and are not for us who on the firing line must fight disease and beat back the hosts of destruction with the best arms at our command. Thankful will we be if these experts can give us more effective weapons. Who that has seen the advancing membrane of diphtheria halt and recede before the onslaught of 5000 units of antitoxine, has not blessed the name of the men whose studies in the laboratory and the hospital clinic gave this most potent weapon into the hands of the most humble private in that army whose "far flung battle line," by day and by night, in the city and in the cabin of the wilderness, fights the grandest battle ever waged by man for man. We know that young men now coming to the front will be better armed and better drilled than men were when we took our places in the ranks, and in this we rejoice. Before they shall answer the last call, I believe that the two great bulwarks of disease, cancer and consumption, which have seemingly withstood all our assaults, will have been captured by their labors.

Though we of the rank and file can not do expert biological and bacteriological work, there is a field of labor as important and as vast in which each and every one can labor for the augmentation of the sum of human happiness. I refer to the education of the people and their state and national representatives in preventive medicine and hygiene. Every physician should be a teacher of the people along these lines. Every county society should declare itself plainly in favor of better lines of living for all. Every newspaper is full of misleading matter on medical subjects and health, and we never utter a word through the press to correct these errors. These false statements we look upon as too absurd to discuss, but we must remember that to a great many they are taken as gospel truth.

I have never yet seen a newspaper editorial on a medical subject that was

*Read before the Lapeer County Medical Society, April 10, 1907.

not full of errors and ludicrous blunders, nor a medical subject handled by a reporter that would not cause a laugh on account of its absurdity in any class of freshmen medics. Yet no one raises his voice to correct these errors and the people live on in ignorance. On every fence and old barn throughout the country and in all street cars and on all bill-boards in the city the patent medicine man pleads with the public to take a physic, but we say never a word to warn them of the baleful effects of depending on cathartics for elimination.

The patent double digested and machine masticated food ads. are filled with the most harmful misinformation, and these fakes are getting millions from the sowing of fears in the minds of the ignorant, and the ignorant of medical and hygienic laws are almost as numerous as the population outside our profession. And we say nothing to educate the people.

I think it the duty of every county society to publish at least once a month some paper on hygiene and the patent medicine and patent food evils. These papers should be read before the society and thoroughly discussed, altered if need be to secure the consensus of opinion of the society, and then given to the public, not as the opinion of any one doctor but as the declaration of the county society.

There are plenty of subjects on which the public ought to be informed. Personal hygiene, the proper construction of houses, sleeping apartments, the care of the sources of drinking water, sanitary clothing, proper construction of school houses, inspection of school children, the necessity of quarantine in contagious disease, the guarding of foods from impurities and bacteria, simple tests for milk and meats, the sanitary disposal of garbage and sewerage in the cities.

On all these subjects the public needs information and needs it reiterated again and again. The county society is the proper teacher, knowing local conditions better than an outsider, and likewise having the confidence of the people whom they would instruct.

Take the matter of house hygiene. How many houses in your community have damp and mouldy spaces unventilated between the floor and the ground. Where mould will grow, other fungi, as the cocci and bacteria, will also breed. We have not yet by any means identified all the pathogenic germs, and many an obscure disorder is due to yet unknown microbes, which breed in these dark spaces below so many dwellings and thence invade the illy ventilated living and sleeping rooms above. All people in the future must know the dangers to well-being and health that lurk in such places.

How much sickness is caused by polluted milk we all know. When the milk is produced on the place the people should be taught how to keep it clean, by having clean stables for the cows, by proper grooming of them, and how best to keep it from contamination after it reaches the house. I have seen milk in uncovered pans in a vegetable cellar. This should never be allowed.

How can water on the farm be secured from contamination? That is worthy of your study. The usual precautions, as placing the wells far from any stables or outhouses, would seem to be so obvious that all people would follow the plan, and yet there are thousands who utterly disregard them. Of course, besides this matter of location, if it is not a driven well reaching into the rock, it should be cemented to within a few feet of the bottom and up above the surface so far as to preclude the possibility of surface water even in heavy rains gaining access to the well. Many a person has lost his life from typhoid by being infected from the family well, just because surface water gained admission to it. Then in the future it will be thought an economy by

the educated farmer to have a bacteriological examination of his well made by the qualified county bacteriologist. As a further precaution, instead of the present system in vogue in the country, dry closets will be used and the nitrogenous waste returned to the soil again.

Then, as to the water supply of our cities, soon the utterly barbarous method of turning our sewerages into the rivers, to poison the dwellers down stream, will be abolished. The state will prohibit the contamination of all streams by sewerage or factory waste.

When one thinks of the present system and knows how many lives are yearly sacrificed by it, one can hardly realize that we are not living in antediluvian times. This thing must be agitated by the medical profession in its capacity as teacher of hygiene until radical laws against such practices are adopted. Every city should be compelled to take care of its own garbage by cremation or otherwise and to return its sewage to the land again. No city has a right to poison other communities down stream. The thing must be stopped. Detroit has always more or less typhoid fever; Marine City nearly always has some cases; St. Clair has greatly improved since they put their intake pipe on the sand bar in the middle of the river. Port Huron has a few cases. There is, as a rule, an increasing number per thousand inhabitants as you go down stream from the foot of Lake Huron.

You may talk of the purifying action of running water, but some germs are bound to survive. At Newport, five miles down the shore from the mouth of the city sewers, typhoid germs were found in the oysters taken at that point. Sporadic cases of typhoid whose source of infection can not be found may have come from such sewer-contaminated oyster beds. Even the bays of the ocean should be protected from pollution. The breeding grounds of oysters, clams and scallops, if they are to continue to be used as food, must be protected from sewage, for from infected shell-fish doubtless many a case of typhoid has had its origin. When the shores of our rivers are inspected by sanitary officers, and all sources of contamination abolished, our wells protected from surface water, our cities compelled to take care of their own garbage and to return the sewage to the soil, much sickness and death will be avoided and the increase in our land products will largely compensate for the money expended in keeping our rivers pure.

Let me speak for a few minutes on another of the topics enumerated above, namely the medical inspection of our schools. Besides the subjects of heating, lighting and ventilating, all of which should have been well and closely considered in the construction of the school house, there remains the need of inspection to prevent the spread of contagious disease. Of course the teacher can, when she observes that a child is heavy-eyed or flushed with fever, send it home with a note advising the parent to call the family physician. If there is a suspicion on the part of the parents that the child may have a contagious disease and the home may be quarantined, it is more than likely that they will not call a physician and the case will, as far as possible, be concealed and unreported. With a medical inspector armed with proper authority, when suspicion of a communicable disease exists, he should be empowered to attach a warning card to the house and of himself notify the family physician to call and watch the case.

But medical inspection is needed not only in cases of contagious diseases, but also for many other ailments. Here is a child who is habitually behind in his work. He is always having headaches and is frequently excused from school. Inspection shows that his eyes are de-

fective and that he does not learn because he can not see plainly, and the eye strain necessary to do his appointed tasks, causes that dull, tired ache of the head and often reflex stomach disturbances. Here is a boy who is dull and inattentive with a stupid face and his mouth wide open. He does not learn and cares little whether he does or not. Adenoids the inspector says, and his parent is advised to have them removed. Then the stupid boy wakes up, takes an interest in his study and brings his record card home with pride for his mother to sign.

How much could be done along these lines that remains undone, how much not only of physical but of mental suffering and childish discouragement and heart-break could be avoided by a competent inspector of our schools. The county society must educate the people up to it.

I have not time nor am I competent to discuss all the topics which properly come under hygiene and preventive medicine, but there is one more subject I wish briefly to consider before closing, and that is marriage. On this subject the public needs the instruction obtainable only from our profession. A ship is not allowed to leave port without a clean bill of health, but the young are allowed to embark on the sea of matrimony no matter what death-dealing and misery-producing disease they may have on board.

In this, the most important step in young peoples lives, in which they need most to be educated, they and the public are most impatient of instruction or regulation. All literature, especially the modern society novel, has taught that in this fateful epoch in life only sentiment should have a voice, while reason and knowledge and prudence should be silent.

You have known many cases where marriage should have been forbidden on account of some serious disease or mental defect in one or both of the parties. Often we have been tempted to go to the healthy one and warn him or her of the dark future, if marriage is contracted with a diseased partner. As a rule we have been silent and the mischief has been done. Imperfect and diseased offspring have come to lead their puny and imperfect lives, to be a burden to society, to sink into untimely graves. If we should go to these young people, and attempt to instruct them as to their duty in the matter, we should be told that we were meddling with strictly private affairs. It is not a strictly private affair. The public is vastly interested in the health, physical, mental and moral, of those who are born into its ranks. Millions of money are spent annually by that public to care for the incompetent and the defective. So great is this burden on society, that some students of social conditions have openly advocated the removal by euthanasia of the hopelessly diseased or crippled, the imbecile, the hopelessly insane and the chronic criminal. McKim in his "Heredity and Human Progress" strongly advocates this method of solving this most difficult problem. This is surely cutting and not untying the Gordian Knot, and there is not the slightest prospect of this method being adopted, though a bill authorizing such a disposition of the defective classes was, only a year or two ago, introduced into the Ohio legislature.

What is more practical and less repugnant to our nature, is the prohibition of marriages where either one or the other of the parties thereto is such a physical, mental, or moral defective as to be likely to produce offspring who shall be either a burden or a menace to society.

Prevention of evils to the individual and to society, rather than cure, is the program among physicians and sociologists for the great battle of the twentieth century. Make the stream of life pure at its fountain head as far as possible.

Educate the public along true lines of actual knowledge. Disabuse the mind of the old mysticism concerning disease and the cure of disease. Teach people that it is not God who, as a penalty for lack of piety or moral sin, visits their households with typhoid, but that their ignorance or carelessness is directly responsible for the sickness. They must come to realize that piety and prayer without fresh air, pure food, and water and sunshine, are of no avail in curing or preventing sickness; that there is no mysticism in medicine, that force and superstition are not natural allies, that they must discard the last and rely on the first as the only effective thing in God's great universe.

The day of the quack and the charlatan, whether his panacea be pills or prayer, will pass away, and no more rob the poor and the ignorant. Education on the line of real things, absolute facts relating to health and human welfare is best given by that oldest and grandest of all philanthropic organizations, the medical profession. The county societies are not doing their full duty unless they enter earnestly on this work of educating the people how to maintain health and prevent disease.

THE NEUROTIC FACTOR IN GASTRIC TROUBLES*

BURTON R. CORBUS, B. S., M. D.,
Consulting Gastro-Enterologist to Butterworth Hospital.
Grand Rapids.

In Dr. Abram's little monograph, "The Blues," I find this paragraph: "The more I observe dyspeptics the more certain is my conviction that nervousness is responsible for the majority of cases. We are a nation of dyspeptics owing to our ceaseless and intense living habits."

Years before, in 1836, Dr. Amariah Brigham wrote a little book on the "Influence of Mental Cultivation and Mental Excitement upon Health," in which he expresses much the same thought:

"Dyspepsia is generally considered a disease of the stomach primarily, but I apprehend that in a majority of cases, especially among students, it is primarily a disease of the brain and nervous system, and is perpetuated by mental excitement."

Certain it is that there is no organ in the body so much under the control of the central nervous system as the stomach. Its close relationship with the ramifying solar plexus makes it a most favorite site for general reflex disturbances, and conversely may itself produce a myriad of reflex disturbances throughout the system. I know of no such prominent and frequent example of the ease with which the so-called vicious circle may be established as is to be found in the various stomach disorders.

The worker along nervous or digestive lines has early impressed upon him the rarity of true primary stomach trouble as compared with functional disturb-

*Read before the Grand Rapids Academy of Medicine, May 21, 1907.

ances arising from a disturbance of nerve equilibrium or as a reflex from some other, perhaps unsuspected, disease. It is a common experience to have the incipient tubercular case show symptoms of gastric disturbance some time before the lung shows solidification; to have indefinite digestive disturbances as a precursor to locomotor ataxia and particularly of Bright's disease. On the other hand, those gastric symptoms based on a pure neurosis are frequently so marked, so closely may they simulate true organic disease, that it is only after the most careful and repeated examinations, with contributing chemical and microscopical tests, that the physician is able to satisfactorily determine that he has not a true organic trouble to deal with.

In my own experience, I should say that fully 75% of my neurasthenic patients have had as one of their most prominent symptoms, some form of indigestion. In very many cases the gastric symptoms were so prominent as to completely overshadow the basic trouble and the patient came to be treated for stomach trouble.

While it is true that in such cases gastric analysis may show no abnormal condition either as to chemism or motor power, and we are forced to attribute the expressed symptoms to the general hypochondriacal condition, yet, more frequently is there such alteration of chemism, or of motor power, as a result of faulty nerve innervation. It is self-evident that where marked gastric irritation exists, there we have the establishment of a vicious circle, and such irritation must primarily be relieved.

The cases of pure gastric neurasthenia, hypochondriacal in type, without marked alteration in chemism, are not infrequent and may be of such severity as to actually threaten life through malnutrition. These are oftentimes puzzling cases, coming to you in such a markedly emaciated, weakened condition that one feels that there must exist a true organic lesion, to account for the condition. The predominant cause lies in the fear of taking food. The unpleasant symptoms which, following the ingestion of food, cause the patient, perhaps on the advice of the physician, to reduce his food to a minimum (a case, which I now have, had reduced his diet to two glasses of milk, one egg and six graham crackers per diem) are almost as variable as the number of individual cases. As a rule, the patient complains of an indefinite feeling of discomfort, pressure, fulness, distension, following the ingestion of food, but varying little from day to day and bearing but little relationship to the quality. Not infrequently one runs across a group of bizarre symptoms—Hemmeter speaks of patients who describe their symptoms as, "similar to the rolling of a ton of brick on his belly"—"to being stabbed with a red-hot knife"—"as being compressed as though in a vise." This latter symptom is a very common one.

It is self-evident that in treating such cases where the emotional strain and the psychical condition are so prominent, suggestion must bear a most important part. Constant re-assurance and encouragement does more than medicine. In the absence of an undercurrent irritant, these patients get well when their extreme apprehension is removed and the system again receives the requisite amount of food calories. In this connection look well to the genital system. I have been surprised at the frequency of sexual irritation frequently exemplified in the habit of masturbation. Adhesions to neighboring organs or enteroptosis may also, and frequently do, form a basis for these sensory disturbances. Indeed, it is often most difficult to determine the localization of the irritation which results in this "dyspepsia nervosæ." Un-

doubtedly, however, the largest percentage can be classified as having their origin in:

First—Auto-intoxication and the Acidosis.

Second—Brain.

Third—Genitals.

A neurological diagnosis must necessarily in the majority of cases be based on exclusion, and particularly in these cases is a most careful differentiation and most unbiased judgment requisite. The great danger, I believe, is a neglect to appreciate the important part the stomach frequently plays as a focus for the manifestation of some serious undercurrent trouble acting reflexly, and of treating as of slight moment these cases which come complaining of indefinite distress, pre-cordial pain, and such other mild symptoms as might be classified as simple stomach trouble.

It is not my purpose to discuss the multiform varieties of stomach neurosis—not at all those neuroses so characteristically of nervous origin as to be indeed separate entities. I do not believe that there is a functional disease of the stomach which cannot have its origin in a neurosis. This is no argument, however, for the great tendency, as Riegle points out, to call all diseases of the stomach which do not conform to the typical disease-syndrome—neuroses.

It is only after the most exhaustive examination with repeated chemical and microscopical tests, that we are justified in making such a diagnosis. Frequently the acuteness of the diagnostician is tested to the utmost in an effort to make a differential diagnosis between such an important organic disease as carcinoma and a pure neurosis, for we may have a pure neurosis, causing hypochlorhydria—even a total absence of hydrochloric acid—and given this phenomenon combined with a marked motor insufficiency, a not unusual condition, lactic acid and even the Oppler-Boas bacilli may be found.

I desire to briefly consider one disease of the stomach which in a majority of cases, but not by any means all, is essentially a neurosis and which in my experience is not only the most common of the gastric neuroses, but also the most distressing.

That hyperchlorhydria may be, and perhaps is, most frequently of a purely neurotic origin, was long contended and insisted upon by Reichman, Ewald and others, and is now granted by practically all authorities. Of the allied syndrome, the Gastro-succorrhea Periodica of Reichman, in which there is an outpouring of gastric juice irrespective of the ingestion of food, there has ever been a uniformity of opinion, the connection between the attacks and the mental state being so characteristically marked. That the chronic hypersecretion of Riegle, the gastro-succorrhoea chronica of Reichman, may also be of nervous origin, is accepted but is probably more often a secondary symptom of "ulcer, pylorospasm or motor insufficiency." (Hemmeter.)

The exact etiology of the disease is still undetermined. We do know, however, that the predisposing condition in a vast majority of cases, lies in the nervous system. Those individuals who perform much mental labor, the easily excitable, the neurasthenic, the melancholic (von Noorden) are especially liable, while psychic influences, violent emotions and mental overwork suffice to bring on the acute attack.

Almost all my extreme cases of hyperacidity and the closely allied periodic hypersecretion have been among professional men. A physician now under my care, who has long been troubled with periodic attacks, is able usually to trace the individual attack to mental strain and worry, a succession of serious and worrisome operative cases, I remember, bringing on the last attack.

The patients frequently are extremely apprehensive in regard to eating, but unless this fear of the pain after eating has caused them to adopt an unreasonably restricted diet, they are usually fairly well nourished and have good appetites.

The symptoms are variable but in a reasonably severe and typical case the patient complains of heaviness, an indefinite distress accompanied by pyrosis and eructations, coming on after eating, sooner after a light meal than a heavy one, the distress increasing in intensity until from three to four hours after eating there develops an actual pain, frequently cramp-like and extremely severe. This distress persists until the next meal unless vomiting interferes. The most severe attacks are usually accompanied by pyloric spasm—this spasm, brought on by the acid irritation, holding back the acid contents of the stomach.

The patient frequently has independently discovered that he can obtain relief by eating something. A patient today told me that he always carried with him a lump of sugar and found relief in taking that. (This is according to Prof. Strause's experiments—that sugar inhibits the gastric secretion). A hard boiled egg or a piece of cheese are other remedies which the patient frequently has discovered independently and which I often prescribe, the reason being, of course, the high acid-combining power possessed by these articles.

The diagnosis is to be based on an examination of the stomach contents after a test breakfast or test meal. There is, however, no positive, definite, mathematical relationship between the amount of acid found and the severity of the symptoms. Much depends on the degree of hyperesthesia present, and it is often the case that a normal—if we consider an acid contents of .2% normal—will give rise to characteristic symptoms.

Another interesting class of cases which have their origin in this hyperacidity but complain perhaps of but little local disturbance, are the cases of severe migraine. Such a case I have had recently. This man, a dentist, has had periodic attacks of migraine for sometime, latterly being forced to give up work from one to two days about twice a month. The true gastric symptoms were rather indefinite though there were sufficient symptoms at the time of the attack to direct the doctor's attention to his stomach. Here again was traceable the connection between the psychical state and the attack, over-work or a period of worry usually preceding, the last time the serious illness of his mother being the cause.

The connection between migraine and hyperchlorhydria has long been recognized, and many explanatory theories have been suggested—the Auto-intoxication theory of Rachford seeming to me to be most reasonable. He suggests that the hydrochloric acid in excess "by union with the calcium, potassium sodium and magnesium of the blood and tissues may, by the removal of these bases, produce symptoms directly due to the diminished quantity of these alkalies in the blood and tissues. These alkalies in definite quantities in the body-media are known to be absolutely necessary to normal physiological processes and any diminution of these qualities is fraught with serious results."

As to treatment:

First and most important is diet, in regard to which there is a most decided difference of opinion. Is the diet in these cases to consist largely of albumins, such as meats and eggs, which we know tend to stimulate the secretion of the gastric juice, but at the same time possess such marked combining power as to be capable of taking up the acid excess, or shall we confine the patient to a dietary made up largely of proteids

with little acid combining power, but which do not excite the glandular activity?

After trying both systems I prefer that the diet shall consist of those foods possessing highest combining power. One advantage is that such foods are more palatable and contain a greater amount of calories. Further, I advise my patients to eat only two meals a day, morning and night, this allowing the over-worked secreting apparatus to recuperate and by not limiting the amount, expect that the free HCL—and it is the free acid which produces the symptoms—shall be largely combined. This is a utilization of the results of Pavlow's experiments on dogs, who found that food administered at short intervals caused repeated active discharge of the "appetite juice," but when the entire ration was given at once there was a marked drop in the formation of hydrochloric acid and the ferments.

Pavlow also determined that fats inhibit the glandular activity, so it is a most rational treatment to give olive oil in decided doses. There is a further advantage in the use of olive oil since it serves to counteract the tendency to constipation almost invariably present in these cases and is also of most decided value as a nutrient. In cases where the olive oil it not well borne—there are but few such cases—an emulsion of sweet almonds answers very well but does not have the nutritive value.

Alkalies for temporary relief are almost invaluable. The magnesia ustae, in that it does not combine with the chlorides as do the carbonates, is to be preferred. I usually combine with it bismuth subgallate and lupulin, the latter in ten to fifteen grain doses having apparently a most favorable action, especially in the essentially neurotic cases.

In the more serious cases I use a pill or capsule of silver nitrate and extract belladona given before meals, and occasionally, particularly where hypersecretion is present, I resort to atropia hypodermically.

There is, however, no treatment which gives such prompt relief and has such curative value as lavage, first with an alkaline solution, then with a silver nitrate solution 1 to 1,000 or 2,000.

It is perhaps unnecessary to remind you that we are dealing with an essential neurosis in the majority of cases and though immediate treatment must be directed to the relief of the local irritation, our efforts at the same time should be directed toward improving the nerve tone and regulation of the mode of life.

The 39th annual meeting of The Medical Editors' Association on June 3 at Atlantic City, was the most successful in point of attendance and general interest ever held. The rapid increase in membership is an assurance that in the future the meetings of the American Medical Editors' Association will be an important feature annually. Sixty-four new members were elected.

An important feature of the meeting was the appointment of a Committee of Publicity, whose duty it will be to see that the medical profession, through the medical press, are promptly informed upon all matters of general interest.

The following officers were elected: President, C. F. Taylor, M. D., Philadelphia, Pa., Editor of the Medical World; 1st Vice-President, Kenneth Millican, M. D., St. Louis, Editor St. Louis Medical Review; 2d Vice-President, H. E. Lewis, M. D., N. Y., Managing Editor of the International Journal of Surgery; Secretary and Treasurer, J. MacDonald, Jr., M. D., Managing Editor of the American Journal of Surgery.

Executive Committee: Dr. W. C. Abbott, Editor of American Jorunal of Clinical Medicine, Chicago, Ill.; Dr. W. A. Young, Editor of Canadian Journal of Medicine and Surgery, Toronto, Ont.; Dr. D. C. English, Editor of the Journal of the Medical Society of New Jersey, New Brunswick, N. J.

A CASE OF PERFORATION OF THE SMALL INTESTINE, WITH OPERATION AND RECOVERY*

W. T. S. GREGG, M. D.,
Calumet.

Peter Y. Austrian, age 35, was brought to the Tamarack Mining Company's Hospital from his home, one and one-half miles from the hospital, in a sleigh, by his boarding boss, at 3:30 a. m., Feb. 15th, 1907. I found him sitting in the waiting-room and in reply to questions he complained of pain in the pubic region and said only "no water come." He was catheterized and only a few drops of urine came away. Examination showed the abdomen flat, rigid and tender at every point, with a small hernia protruding from the right inguinal ring. Gentle taxis easily reduced the hernia and as he spoke or understood only a few English words and consequently no history of present or previous illness could be elicited, I thought it best to put him to bed and await developments. Pulse was about 80. Temperature was not taken. I thought at the time that probably the presence of the hernia accounted for the symptoms, yet he looked so sick I thought it better not to send him back home. He was given a glycerine enema and put to bed. Enema came away clear. He slept from 5 until 7 a. m., without having received any anodyne or medicine whatever. Soon after waking he had a slight bowel movement. At 7 a. m. pulse was 86 and temperature 101 2-5. He was soon groaning continually with abdominal pain and when questioned, put his hand to lower part of abdomen and said "no water come," as before. He was catheterized the second time at 8:30 a. m., and two ounces of urine withdrawn. A high rectal injection of salts, glycerine and turpentine was given at 9, and it came away clear. Another was given at 9:30 with same result. By this time his brother had appeared on the scene and with great difficulty and repeated questioning, using for the purpose three languages and two interpreters, the facts appeared that he had been home from work, sick, for 17 days, that during that time he had twice visited the hospital and gotten medicine from one of the physicians for constipation, at one time receiving calomel and the other Epsom salts, that five hours before going to the hospital the pain in his belly had become a great deal worse, that he knew nothing of any hernia, had not vomited, nor had he eaten anything for several days. The fact that he had been in bed for the last five days before going to the hospital was not learned at this time, and this fact only came out two weeks later. At 9 a. m., his pulse was 96 and temperature 100. He had the gray, drawn face of severe illness, he groaned constantly and was perspiring so profusely that when he sat on the slop-jar to expel the enema the sweat dropped from the end of his nose to the floor. It could easily be seen that he was steadily getting worse. Viewed from any angle, here was a had case—bad to leave alone—bad to operate on. The question was, what was the exact pathology inside that abdomen? The

*Read before the Surgical Section of the Michigan State Medical Society, Saginaw, May 15-16, 1907, and approved for publication by the Publication Committee.

symptoms pointed to some obstruction of the intestinal canal, but was it ileus, volvulus, intussusception, obstipation, perforation of an acute appendicitis? We could not say, and an exploratory laparotomy was proposed to the patient, who readily consented. By the time the priest had seen him and prepared him for his last journey, it was 11 a. m., soon after which the operation was begun, Drs. Lawbaugh and Rodi assisting. The abdomen was still very flat, rigid and tender. It was prepared by scrubbing with Harrington's solution and alcohol. The incision was a long one through the right rectus and on opening the peritoneum a considerable quantity of yellowish fluid, containing flocculent, whitish, exudate appeared. After mopping this out it was seen that all the intestines in the neighborhood of the right iliac fossa were intensely inflamed, covered with exudate and so friable as to be almost gangrenous. Indeed the smooth, rounded gauze packer, commonly used to pull up the intestines, so bruised and nearly tore through the large intestine, that it left a hemorrhagic spot wherever it touched and its use had to be abandoned. After packing back the intestines with gauze, search was made along the ascending colon for the source of obstruction or a perforated gangrenous appendix, but none found. The entire right side of the pelvis was exposed to view clear down to the lowest portion of the rectum, but the deeper we went the more healthy the structures looked.

After replacing these intestines in the right side of the pelvis, with the intention of searching elsewhere, a portion of the ileum adjacent to the cecum was pulled into view and there, about six inches from the ileo-cecal valve, was a round perforation 1-6 inch in diameter, with yellowish bowel contents oozing freely out. The wall of the gut at the point of perforation was enormously thickened and the tissues for quite a distance very friable, so that an attempt to close the leak by Lembert sutures had to be given up, as the sutures tore through as fast as put in. It was seen that nothing but a resection of that portion of the intestine would avail. Accordingly clamps were put on above and below the ulcer-bearing area and a complete section of the gut made together with a V-shaped section of the mesentery. This latter was sutured with catgut, bringing the mesenteric edges of the healthy gut close together. A medium-sized Murphy button was then used to form the anastomosis. A running over and over No. 1 silk suture penetrating all coats of the bowel was placed at the edge of both ends of the gut; one-half of the button placed in each end and the sutures pulled tight and tied and the two halves of the button pushed together. The line of junction was then covered in by a continuous peritoneal suture, partly of the Lembert and partly of the Cushing variety, beginning at the mesentery on one side and running around to the other. Dry sponging completed the toilet of the peritoneum and the wound was closed in the usual manner with layer suture with a split drainage tube and iodoform gauze drain at the lower angle. Time of operation—about 2 hours. Pulse at end of operation—about 110. Highest pulse after operation—about 124, at 9 p. m. of same night. He was put on strychnine (gr. 1-60) and salt solution given subcutaneously and by rectum. Voided 12 oz. urine at 7 p. m.; vomited a little late in the evening. For 24 hours after the operation the temperature was normal, then it came up a little and was between normal and 101 2-5, the highest recorded for one week, since which time it has been normal. Pulse has been between 80 and 90 since third day after operation. Drainage tube removed in 48 hours. Only a short, small tube sufficient to keep the track through the abdominal

wall could be put in to replace the one taken out. After a salts and glycerine enema on the third day, a large fluid bowel movement occurred and free passage of flatus. On the evening of the fifth day after operation, a fecal odor was noticed on dressings and soon a freely discharging fecal fistula was formed with odor like that of contents of large intestine. It contained some undigested food particles, soon greatly lessened in amount, and became of a color and odor more like that usually found in fistulas from the small intestine. So I am at a loss to know whether one of the bruised spots on the large intestine broke down, or whether, as is more likely, a leakage occurred at the point of anastamosis of the Murphy button. At any rate the button held long enough for adhesions to form, walling off the infectious discharge from the general peritoneal cavity. The button has not yet come away and rectal examination does not disclose it in the rectum. The bowels move per vias naturales every day. Patient was given water for three days, then Mellin's food, and broth; then milk; later softer diet. He has been quite comfortable, sleeping and eating well.

The fecal fistula ceased discharging in about two weeks and in two more weeks the incision was all healed and perfectly dry. It remained so for fully two weeks when the upper and lower angles broke down again and there are now, May 9, two small sinuses which apparently do not communicate with the intestine. These are being aspirated daily with a breast pump, which withdraws a little sero-purulent fluid and causes passive congestion after the method of Bier. According to Hemmeter, Nothnagel classifies intestinal ulcerations into six varieties:

1. Ulceration in consequence of necrobiotic processes.
   a—Simple ulcer of duodenum.
   b—Due to burns.
   c—Embolic and thrombotic.
   d—Amyloid.
2. Ulceration due to inflammatory processes.
   a—Catarrhal.
   b—Follicular.
   c—Stercoral or decubital.
3. Ulceration due to acute infections.
   a—Typhoid.
   b—Dysenteric.
   c—Diphtheritic.
   d—Anthrax.
   e—Sepsis.
   f—Erysipelas.
   g—Smallpox.
4. Ulceration due to chronic infections.
   a—Tuberculosis.
   b—Syphilis.
5. Ulceration due to constitutional diseases.
   a—Gout.
   b—Scurvy.
   c—Leukemia.
6. Toxic Ulceration.
   a—Uremic.
   b—Mercurial.

In the case repeated above, the diagnosis is still unsettled, but the probabilities greatly favor tuberculosis or typhoid, with the chances in favor of the latter. This man was sick enough to be home from work for nearly three weeks, and it is altogether likely this was a case of walking typhoid. After his operation he was treated and dieted as typhoid. No Peyer's patches were found on operation, though they were not very carefully looked for. As to the classical symptoms of perforation, some he had some he did not. He had the sudden, sharp, paroxysmal pain of increasing severity, and early muscular

rigidity, but without distention or tympanites. The signs of shock did not appear at once, and if the crossing of the curves of pulse and temperature did occur, it did so soon after the perforation, as after entering the hospital pulse and temperature went up together. No Widal test was made, nor was any microscopical examination of the ulcer made.

DISCUSSION.

Dr. H. C. Wyman, Detroit, suggested that in typhoid fever an enterostomy ought to be done, in order to apply local treatment to the seat of the disease and to forestall perforation and other common complications.

Dr. J. A. King, Manistee, described a case of traumatic rupture of the gut, without external signs of injury. Operation and recovery.

Dr. F. E. Parkinson, Saginaw, described the case of a child who jumped from a porch, and sustained an injury to the ankle, but made no complaint of trouble elsewhere. Three days later abdominal symptoms developed, and operation was advised, but refused, and the child died.

Dr. F. W. Robbins, Detroit, emphasized the fact that laparotomy should be done at the earliest possible moment in cases of obscure abdominal conditions, without waiting for an exact diagnosis. Reported an illustrative case.

Dr. H. B. Garner, Traverse City, described a case of an obscure abdominal condition, in which the diagnosis of peritonitis was made by a blood count.

Dr. Wm. Fuller, Grand Rapids, spoke of a case of perforated gut, possibly caused by a hernia, which was known to exist.

Dr. H. O. Walker, Detroit, suggested that the sinus remaining in Dr Gregg's case might be due to the Murphy button, which had not been passed, and an X-ray would be helpful

Dr. S. L. Ballard, Bay, described the case of a boy who fell on a box, and developed severe pain, pulse 168, no temperature, no external sign of injury, dulness in left flank, blood in urine. This proved to be a rupture of the kidney.

L. Kast and S. J. Meltzer here present a preliminary communication based on animal experimentation on the subject of abdominal pain. The prevailing view based upon exact surgical observations is that the abdominal organs, whether normal or inflamed, possess no sensation of pain. The writers, on the other hand, have found in animal experimentation that the sense of pain is present in normal organs, and that it is considerably augmented in inflamed organs; and that a subcutaneous or intramuscular injection of cocaine is capable of completely abolishing this sensation in normal as well as in inflamed organs. They suggest that the anesthesia of the internal abdominal organs observed by certain surgeons was due to the use of cocaine. These investigators have also found that the injection of a small dose of cocaine has a calming influence upon the excitation of the narcotized and operated animals. These new observations are capable of practical application in medicine.—*Medical Record,* December 29, 1906.

G. Lenox Curtis declares that until recently drugs have been almost the only means available for the treatment of this disease, but now more efficient measures are at hand. The chief of these he believes to be the ozone-producing electric current. The writer then gives a brief outline description of the apparatus by which ozone is generated. He finds ozonation an ideal remedy for all stages and degrees of congestion. The effects of ozonation are both mechanical and chemical. Abnormal accumulations are oxidized and destroyed, and the morbific elements in the blood are dealt with in a similar manner. However, in treating pneumonia the writer does not rely upon any single remedy. A profuse and prolonged sweat often proves beneficial. External heat as a means to this end is to be preferred to drugs. The use of oxygen in the first stage is valuable. Elimination must be looked after. The patient should be well nourished. The writer closes with a plea for preventive medicine.—*Medical Record,* March 16, 1907.

The Journal of the Michigan State Medical Society

All communications relative to exchanges, books for review, manuscripts, advertising and subscriptions should be addressed to B. R. Schenck, M. D., Editor, 502 Washington Arcade, Detroit, Mich.

Subscription Price, $2.00 per year, in Advance.

AUGUST

Editorial

The physicians of Michigan have for years taken a lively interest in the American Medical Association. Many men annually attend its convention and watch with concern its progress from year to year. At the 1907 meeting in Atlantic City there were 93 Michigan physicians registered; only seven states had a larger registration—Pennsylvania, 1,019; New York, 560; New Jersey, 249; Ohio, 213; Illinois, 183; Massachusetts, 176; Maryland, 117. Last year at Boston Michigan was tenth with a registration of 111, the first nine being Massachusetts, 1,478; New York, 489; Pennsylvania, 433; Illinois, 237; Ohio, 189; New Hampshire, 156; Rhode Island, 153; Maine, 176; Connecticut, 115. It is natural that the states in the near vicinity of the place of meeting should have a large representation; hence the large figures of the New England states last year, and of Pennsylvania, New Jersey and Maryland this year. The New England states, excepting Massachusetts, usually send few visitors, and the same is true of New Jersey and Maryland. New York and Pennsylvania, being states of vast population and a great number of physicians, always have a large attendance. All things considered, then, Michigan's delegation is very creditable.

Reckoned in ratio of registration to number of physicians in the state, 1906 gave Michigan about 2½%, Illinois 2½%, Ohio 2½%, New York 4%, Pennsylvania 4%; 1907 gave Michigan 2 3-10%, Illinois 1 9-10%, Ohio 2 8-10%, Pennsylvania 10%, New York 5%. This makes Michigan's showing even better than the actual figures of attendance.

It is to be hoped that this state will maintain and improve her record; it means progress for the individual and for the profession. It is an index of the alertness and strength of medical men and with our central situation there is no reason why these factors should not constantly better the conditons.

♣ ♣ ♣

The throwing of bouquets at the average medical meeting is a conspicuous feature of many discussions. If verbatim reports were made of the impromptu remarks following upon the formal essays, how many of them would begin thus: "I am sure we all feel greatly indebted to Dr. ——— for his very able paper," or "I certainly congratulate Dr. ——— upon his excellent and highly entertaining paper." The formulae differ, but we hear the same phrases over and over again and one speculates upon how much sincerity lies behind the stereotyped compliment. It is surely a pleasure to have a good essay recognized, and a timely expression of appreciation is quite fitting. But the indiscriminate showering of such expressions becomes meaningless, trite and sometimes ludicrous. Not every paper deserves these encomiums and the majority of an audience must feel that, when a mediocre essay has been given, such remarks are mere flattery and hypocrisy.

A medical meeting is no place for flattery, and while doubtless the indiscriminate praising is not intentional flattery, but a habit, yet it should be borne in mind that a man is judged by what he says. And if Dr. A. perceives Dr. B.'s habitual flattery of other men, he is suspicious when that same flattery is di-

rected toward him. And if Dr. B. appears insincere in one respect he is readily suspected of being so in other and all respects. This is not a logical conclusion, perhaps, but it is human.

Too many words are wasted, anyway, at medical meetings. Often the preliminary compliment is expanded and elaborated, and in a discussion of five minutes the first half consists of a platitudinous volley of flattery, and the peroration is a repetition. And the gist of the remarks is sometimes hard to find, because it is entangled in a prolixity of words which serve more to obscure than to clarify.

It is not necessary to praise every medical paper that is read; universal praise cheapens itself and it becomes valueless. There are men who have contracted the habit so firmly that they never rise to speak without prefacing, and sometimes concluding, their words with fulsome laudation, regardless of the worth of the essay. In such men it is occasionally easy to suspect ulterior motives,—the desire to ingratiate, the effort to popularize themselves, and the fear of criticising what needs dispute. With other men the compliments seem to be offered as a balm,—a prophylactic dressing for the wounded feelings that ensue; for such men follow with ruthless attacks upon any and all points of the essay. This course of procedure seems inconsistent, if not womanish.

It must be admitted that a few graceful speakers have learned the art of adulation to perfection. Honeyed compliments flow from their lips with admirable sonority and one is almost trapped into enthusiasm, until it is remembered that the same man spoke in the same vein at the previous meeting and yet many previous meetings. The practice has the insidious ring of oratory, but it is usually out of place in scientific discussions, and is too readily seen through by men who are waiting for words of intelligence and reason.

There are, of course, some papers that are conspicuously good, and one would like to have them distinguished by deserved praise. But it too often occurs that all superlatives, so to speak, have been exhausted on all other sorts of essays, and the praise bestowed upon the exceptional one falls into the category of commonplace. Compliments to essayists, as to children, should be used sparingly; the wholesomeness of merited praise is soured by the knowledge that it has been scattered indiscriminately on all other occasions. Some men rarely pay a compliment; it is from them that shrewd men desire commendation. The hard-headed, cold-reasoning man of science knows chaff from wheat and his praise is dearly esteemed, because seldom given. When he rises to discuss, he speaks to the point and has something to contribute. He agrees without flattery and disagrees without parley. But the complimentary discusser can often be classed with those who have nothing to say and take long in saying it. They have little to contribute to the real illumination of the subject and keep at a respectful distance from it.

♣ ♣ ♣

Famine in the midst of plenty may be spoken of medical papers in these days of voluminous writings. The famine affects medical meetings even more than it does the printed matter. For while there are plenty of good papers in current periodicals, which read well and give a good impression of the author, yet if these same essays were heard delivered by the authors, the disappointment might be very noticeable. The famine, then, lies in this,—that we seldom hear an essay of adequate subject matter given in clear, forceful, interesting manner. It is the exception when the presentation of the essay is not marred by either an insufficient volume of voice, or too rapid or stumbling reading, or too close attention to the written

page, or some equally detracting defect. All these are points that can easily be remedied to a great degree by care and practice. But there remains one defect which is seldom realized and that is, that in medical papers the speaking version in nearly every case ought to be modified from the reading version.

It is, indeed, sometimes a great advantage if one can *talk* about his subject, instead of reading word for word from a written page. The address without notes is always by far the most interesting to an audience. But this requires a special aptitude and moreover cannot always be done, because of the nature of the essay. However, it is very often possible to alter the essay in certain details of composition so that it will sound much more direct and understandable for speaking version. There are some men who first write their addresses with a view only to the actual delivery; the tone is made informal and conversational, long sentences are avoided, salient points are reiterated, and the whole thing condensed. Then in preparing the same thing for publication it is amplified, the tone is made more formal and repetition is avoided.

A medical essay ought to have some one or more excuses for being. But there is one class of writings which lacks even one excuse, and that is the text-book "re-hash." Probably every society listens in the course of a year to several papers which present nothing new, and nothing old in a new way, and are evidently a hasty jumble compiled from one or more familiar books. Every journal, unfortunately, prints a certain number of such compositions in the year's time.

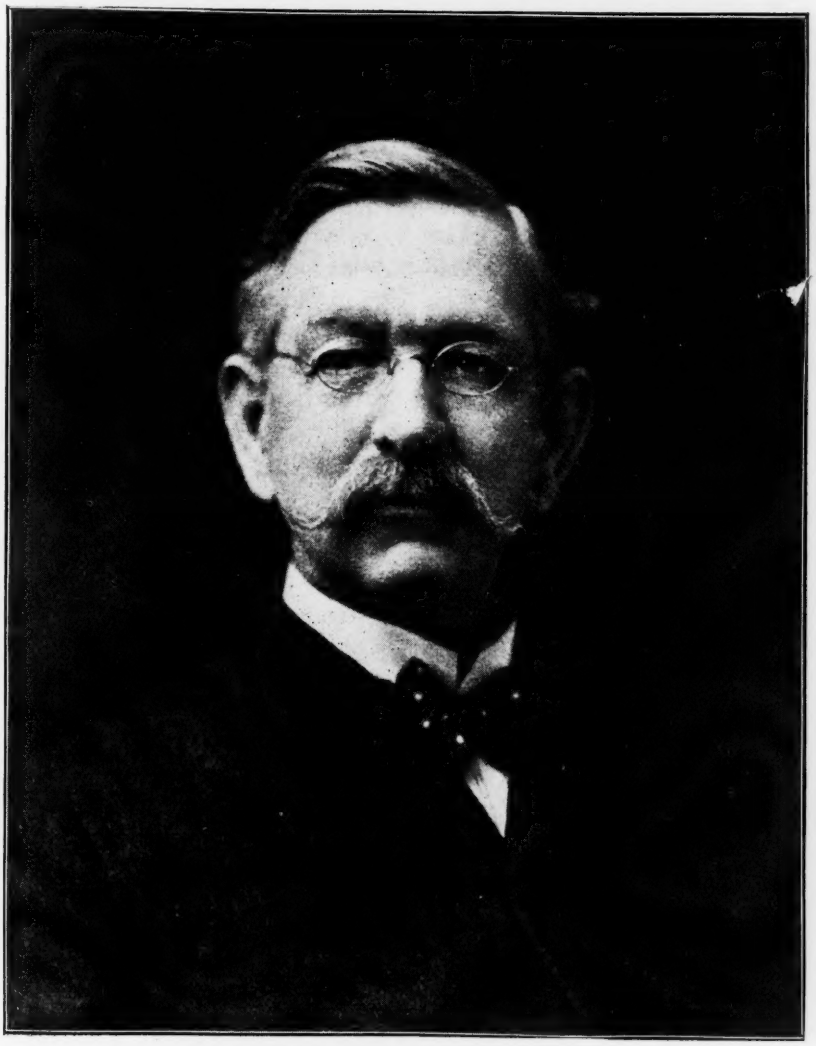
Medical essays may be classed as follows: analytical; statistical; critical; historical; philosophical; case reports; original investigations; new observations; text-book potpourris. Of the last class there is seldom one which rises above the mediocrity to which their very nature consigns them. Medical journals and medical meetings can well do without them, and he who perpetrates them must think little of his audience and less of himself. But from the other classes one can always select a subject, and of these it is hard to tell what is the most valuable. In general, it may be said that the analytical, philosophical and critical papers should be left to men of experience; especially fitting for younger men are case reports, statistical, and investigative articles. Good case reports are always interesting; statistical papers are not interesting to listen to, but always find a niche in the realm of reference compilations; while original investigations are desirable contributions in every way.

♣ ♣ ♣

DR. ALBERT E. CARRIER.

On July 4, at St. Clair Flats, Dr. Albert E. Carrier, of Detroit, died suddenly from heart disease, aged 66. The funeral was held from his late residence on Saturday, July 6.

Dr. Carrier was a well-known physician, not only in Detroit, but throughout the State, and even throughout the country. For many years he had been identified with special work in dermatology, and his zeal, skill and progressiveness had kept him a conspicuous figure in the profession. He was born in Jefferson County, New York, May 16, 1841. Graduated from the Bellevue Hospital Medical College in 1865, he took up practice in Detroit, and with the exception of a few years, when poor health caused him to seek a change in the lumber business, he has been in continuous practice ever since. Dr. Carrier was professor of dermatology and syphilology in the Detroit College of Medicine, dermatologist to Harper, St. Mary's and the Woman's Hospital, was at one time coroner, and in 1905-1906 was president



Dr. Albert E. Carrier

of the Wayne County Medical Society.

He is survived by a daughter, Irene S., and a son, Augustus. The esteem in which the deceased was held is best shown by the following:

Resolutions by the Staff of Harper Hospital on the Death of DR. ALBERT E. CARRIER.

Whereas, death has suddenly removed our friend and co-worker, Dr. Albert E. Carrier, it is fitting that the staff of Harper Hospital take cognizance of the sad event and in memorial express the loss and sorrow sustained by all in this severance of ties of many years' duration; be it therefore

Resolved, That in our profound grief at the death of so beloved and prominent an associate, the members of this staff extend to the family of the decedent their deepest sympathy.

Dr. Carrier was a man of strong character and deep convictions, whose faith and creed were carried into all he did or said; a distinguished member of a profession which he loved and nobly served.

As a teacher he was thorough, and his utterances were marked by a clearness and forcefulness which left no doubt as to his mastery of the subject which he attempted to convey; as a physician he stood for all that was highest and best in his chosen field of work, and by attainment and personal effort ever sought to advance the walfare of his fellows and the cause of scientific medicine; as a man his many excellent qualities endeared him to all who possessed his friendship; he was true and honest, and a Christian gentleman.

Be it further resolved that transcribed copies of these resolutions be sent to the family of the decedent, spread on the records of the staff of Harper Hospital and published in the Bulletin.

EUGENE SMITH,
W. P. MANTON,
P. M. HICKEY,
Committee of Staff of Harper Hospital.

♣ ♣ ♣

The County Society. During the past month a new society has been organized in Ontonagon County, a list of the members of which will be noted under county society news. Ontonagon County was formerly included in the Houghton County territory, but the relatively long distances of the Upper Peninsula made it impracticable for members to attend the meetings, and the resident physicians feeling the need of organization have established the new society.

The State Society now has fifty-seven component branches, all but three of which are active.

♣ ♣ ♣

The following resolutions were adopted by the Section on Nervous and Mental Diseases of the American Medical Association at the recent meeting in Atlantic City:

Whereas, Death has removed from our midst Dr. William J. Herdman, and

Whereas, Dr. Herdman was for many years a teacher of nervous and mental diseases and an active worker in this section of the American Medical Association, and served a term as secretary and chairman; and

Whereas, Dr. Herdman always brought to his work great thoroughness, painstaking care and a trained intelligence, therefore be it

Resolved, That in the death of Dr. Herdman this section has lost a valued contributor, the American Medical Association an unusually efficient member and his colleagues a trusted friend.

C. C. HERSMAN,
HUGH T. PATRICK,
Committee.

Book Notices

Diseases of the Lungs.—Designed to be a Practical Presentation of the Subject for the Use of Students and Practitioners of Medicine. By Robert H. Babcock, A. M., M. D., Consulting Physician to Cook County Hospital. 12 colored plates and 104 illustrations. Cloth, pp. 809. Price $6.00. New York: D. Appleton & Company, 1907.

It was the original intention of this talented author to write a one volume work covering the diseases of the chest. In preparing the portions dealing with the heart, however, it was found that so much space was required that it was decided to issue the work in two volumes. "Diseases of the Circulatory System" was accorded instant recognition and has been widely read. This volume is uniform with the first in appearance and is equally good.

The various diseases of the lungs are considered in logical order, much space being given to symptomatology and case histories. Diagnosis and treatment have not been neglected. The author has a fluent style, making the reading both easy and pleasant, while from a scientific viewpoint, the book leaves nothing to be desired, although one might perhaps criticize the relatively small number of pages given up to the diseases of the pleura. The most important chapters are happily the best, the one on tuberculosis being especially good.

This is practically the only English book devoted exclusively to this particular field and it can be safely said that few readers will be disappointed in it.

Metabolsim and Practical Medicine.—By Carl von Noorden, Professor of the First University Medical Clinic, Vienna. Anglo-American Issue under the Editorship of I. Walker Hall. Professor of Pathology, University College, Bristol. Vol. I. The Physiology of Metabolism, pp. 450. Price, $4.00, net. Vol. II. The Pathology of Metabolism, pp. 525. Price, $6.00, net. Chicago: W. T. Keener & Co., 1907.

To say that this work is the most important one of the present year is not an exaggerated statement. Since its appearance, the German text has been looked upon as the authority and it is indeed a matter of congratulation that its wealth of information is now available for English readers. The translation has been done by several men and the whole edited by Professor Walker Hall, the well known Bristol investigator. Professor Hall has made certain additions, wherever necessary to bring the work up to 1907. He has also added to the bibliographies at the end of the chapters so that recent American and English papers of note are now included.

The English edition will appear in three volumes, the first two of which are before us. The first volume by Levy, is devoted to the physiology of Metabolism, and the second volume on the Pathology of Metabolism is by various authors, notably von Noorden, Kraus, Schmidt, Weintraud, Matthes, and Strauss. It would be quite impossible, even had we the knowledge, to write a critical review of these volumes, within the limits of our space. Suffice it to speak of their importance and to say that they cannot be overlooked by the man who wishes to keep abreast of the rapidly accumulating knowledge on these all important topics.

We cannot too highly recommend the English book paper employed. It is a great improvement on the heavy and highly glazed paper used in most of our American text books, although, of course, not as well adapted to illustrations.

Progressive Medicine.—Vol. IX. No. 2. Edited by Hobart Amory Hare, M. D., and H. R. M. Landis, M. D. Philadelphia: Lea Brothers & Co., 1907.

To this number of Progressive Medicine, Coley contributes an excellent review of the progress in the treatment of hernia, especial attention being given to the more unusual forms. Many important reviews of recent articles on the surgery of the abdomen are given by Foote and on gynecology by Clark. In the latter section fully half of the space is devoted to the important question of cancer of the uterus. Stengel discusses diseases of the blood, diabetes, gout, obesity and disturbances of the ductless glands. Jackson reviews the progress in ophthalmology.

Progressive medicine is the best review journal published, for the articles touched upon are carefully selected, and so well arranged that consecutive reading is easy. Sufficient comments by the editor are made to prevent confusion.

A Manual of the Diagnosis and Treatment of the Diseases of the Eye.—By Edward Jackson, M. D., Professor of Ophthalmology in the University of Colorado. Second Revised Edition. 12mo of 615 pages, with 182 text-illustrations and 2 colored plates. Philadelphia and London: W. B. Saunders Company, 1907. Cloth, $2.50 net.

As a book for beginners and general practitioners the author has covered the subject in a satisfactory manner. If the book is for that

purpose alone it would hardly seem worth while to include three chapters on refraction and considerable space on operative work and its technique. However, these points are treated tersely and are made quite clear, and they help toward completeness. Such a widely used drug as argyrol ought to be mentioned under conjunctivitis.

The more usual lesions of the eye, which may often fall to the lot of the general practitioner for at least diagnosis, are dwelt upon with care and thoroughness. There is a considerable bibliography to assist those who desire further knowledge. A chapter on the association of ocular derangements with general diseases is highly commendable.

Hints on the Management of the Common Infections.—By R. W. Marsden, M. D., Honorary Physician to the Ancoats Hospital, Manchester. Cloth; 5½ x 8¼ in:; pp. 128; price, $1.50. New York: E. B. Treat & Co., 1907.

In this neatly printed little book, Marsden has given much excellent advice on the management of patients suffering from the every day infectious diseases. Sound advice is given on hydrotherapy, nursing, dietetics and medication, all in such convenient form that it is a very good manual for ready reference.

The Essentials of Histology, Descriptive and Practical .For the use of students. By Edward A. Schafer, F. R. S., Professor of Physiology in University College, London. New (7th) edition, revised and enlarged. Octavo, 507 pages, with 552 illustrations. Cloth, $3.50, net. Lea Brothers & Co., Philadelphia and New York, 1907.

Schaefer's Histology has been a well recognized authority and has been used by students for many years. Its deserved popularity has made frequent reprintings necessary and it has been revised from time to time. The seventh revised edition has just appeared.

Particularly to be recommended are the numerous illustrations, which are clear, if not so elaborate as in some books. Many are in colors. It is printed on thin but excellent paper, so that the contents equal those of much more bulky books.

Physical Diagnosis with Case Examples of the Inductive Method.—By Howard S. Anders, A. M., M. D., Professor of Physical Diagnosis, Medico-Chirurgical College, Philadelphia. Illustrated with 88 illustrations in the text and 32 plates. Octavo, 450 pages. D. Appleton & Co., New York, 1907.

The author says in the introduction: "The purpose is not to be cyclopedic in the mere enumeration of physical signs to the burden of memory; the technical, logical and practical are more worthy of emphasis and development. It is vitally important that the student, in the practice of a careful technic, gains assurance of observation and intelligence of apperception; and that he learns to think logically upon what he thus finds." We believe that this idea has been well carried out, for emphasis is laid on thoroughness and carefulness.

Inspection, mensuration, percussion and auscultation are carefully described. There are tables of differential physical signs and an excellent section, beautifully illustrated, on the X-ray in diagnosis.

It is a book worth reading.

Tuberculosis as a Disease of the Masses, and How to Control It.—By S. A. Knopf, M. D., New York. Paper, 25c; cloth, 50c. For sale by "Charities," 105 E. 22nd St., New York City.

This is the fourth edition of an essay which was awarded the prize of the International Congress in 1899. Since then it has been revised and added to. It is now illustrated and contains a supplement on Home and School Hygiene, the Sanitarium Treatment at Home, and a review of Antituberculosis Movement.

It is an excellent book to put in the hands of the laity.

The American Pocket Medical Dictionary.—Edited by W. A. Newman Dorland, M. D., editor "The American Illustrated Medical Dictionary." Fifth Revised Edition. 32mo of 574 pages. Philadelphia and London: W. B. Saunders Company, 1906. Flexible morocco, gold edges, $1.00 net; thumb indexed, $1.25 net.

This dictionary is an admirable example of conciseness. It is invaluable to the medical student, who can carry it in his pocket and at once learn the correct spelling, pronunciation, and meaning of new terms as he encounters them. If such a practice were more generally indulged, there would be a marked diminution of misspelled words in examination papers, to say nothing of more intelligent usage by students and graduates alike. A dictionary is certainly indispensable and even if one possesses the larger

works of this kind, the smaller one is the more frequently used. Dorland's little volume should be recommended to students and practitioners without reserve. There are many tables included, which are of great value, and a complete dose compend as the conclusion.

Practitioner's Handbook of Materia Medica and Therapeutics.—Thomas S. Blair, M. D. 253 pages. Published by the Medical Council, Philadelphia, Pa., 1907.

Materia Medica and Therapeutics is the title of a small volume beginning with a long wordy introduction in which the author tries to justify its publication on wholly inconsistent grounds. He muddles up scientific pharmacology with therapeutic empiricism and homeopathic nonsense. Almost every drug that has ever been administered by physician, veterinary, patent nostrum vender, or herb quack is exploited as "high recommended" or "used from antiquity and recently introduced." The book is an unreliable jumble. It takes an optimist to buy it, no less read it.

County Society News

ONTONAGON.

A county society has been organized in Ontonagan county and a petition sent in for a charter from the State Society.

The following physicians are the charter members: E. J. Evans, Rockland; W. B. Hanna, Mass City; E. W. Knowles, Victoria; F. J. Larnard, Greenland; F. W. McHugh, Ontonagon; J. S. Nitterauer, Ontonagon, and A. L. Swinton, Ontonagon.

Dr. J. L. Nitterauer was elected president and Dr. F. W. McHugh, secretary-treasurer.

F. W. McHUGH, sec'y.

Correspondence.

Bay City, Mich., June 24, 1907.

To the Editor:

Inasmuch as the writer has seen cases aggravated by dilatation, it might seem interesting to consider the "rationale" of this and other methods of treatment. Like many other methods, this seems to be the result of jumping at conclusions. Then, what is the cause of the enlarged veins, piles, irritation and contracted sphincter?

We usually find indigestion first of all, with all the other various complications. Thus as the cause, we usually have indigestion, constipation, etc., with sluggishness and more or less obstruction of the liver and other organs of digestion. Then, by the proper treatment of this condition, we attempt to remove the cause, whereas by dilatation of the sphincter and rectum, we merely treat the effect. With the other appropriate treatment, the dilatation might appear successful, though this would seem like a case of "post hoc propter hoc"—mere coincidence.

GEO. A. WILLIAMSON, M. D.

News

Dr. A. W. Alvord, of Battle Creek, has been appointed member of the State Board of Registration in Medicine for a term of four years, beginning Oct. 1. He succeeds Dr. George Ranney, of Lansing.

Dr. W. E. Woodbury has been appointed assistant physician at the state asylum in Ionia.

Dr. A. H. Steinbrecher and Dr. C. W. Hitchcock have returned from medical pilgrimages in Europe.

The Interstate Medical Journal of St. Louis announces the purchase of the St. Louis Courier of Medicine, and its consolidation with the Interstate on July 1. This is the fourth medical journal purchased and absorbed by the Interstate during the past few years.

Dr. Howard A. Kelly is preparing a new work on medical gynecology soon to be issued.

At the annual meeting of the Blackwell Club of Detroit, which is composed entirely of women physicians, the following officers were elected: President, Dr. Harriet L. Hawkins; secretary-treasurer, Dr. Jean A. Vernier; councilors, Drs. Lucy J. Utter, Grace M. Clark, Juanita I. Lee.

The officers of the Wayne County Medical Society for the coming year are: President, Dr. Alva N. Collins; vice-president, Dr. Kenneth Gunsolus; secretary, Dr. Walter D. Ford (re-elected).

The city of Kalamazoo has provided a municipal tuberculosis colony on the hills in the neighborhood of the city.

Diphtheria has recently prevailed in Big Rapids, small-pox at Saginaw, Calumet, and Sturgis.

The Annual Commencement of the Detroit College of Medicine was held on May 31, when 69 students were graduated. The Alumni Association elected as president Dr. A. W. Ives, Detroit, and as secretary Dr. J. C. Dodds, Detroit. The alumni clinic week was very successful, continuing from May 22 to 30, and presenting such men as Turck, Patrick, Jacobi, Forscheimer, C. A. L. Reed and Chevalier Jackson.

Dr. Samuel Gurney, formerly of Detroit, now of the Philippine constabulary service, has been promoted, and now holds the equivalent of the captain's grade.

The Rockefeller Institute has recently made appointments for research work. Among the grants to aid special researches are those to Dr. F. G. Novy and Dr. A. S. Warthin, Ann Arbor.

Dr. Flemming Carrow, Detroit, has been appointed a member of the State Board of Registration in Medicine, in place of Walter H. Sawyer, Hillsdale, and Dr. Jos. H. Ball, Bay City, as successor to Dr. Oscar Le Seure, Detroit. Drs. Theodore A. Felch, Ishpeming, and Henry C. Maynard, Hartford, were reappointed.

Dr. Frank B. Allison, recently house physician at Harper Hospital, resigned to enter private practice with Dr. J. A. MacMillan, Detroit.

Drs. N. A. Mallory, L. C. Pike, Wm. P. Melody, and F. B. Stutske have been appointed city physicians of Detroit, and Dr. J. W. Hoffman reappointed as pharmacist.

Dr. F. N. Blanchard, of Detroit, was recently operated on for appendicitis at Harper Hospital.

Dr. W. B. James, assistant medical superintendent at the Wayne County House, tendered his resignation the first of July, and will enter a business firm in Marysville.

Dr. H. E. Clarke, for several years on the staff of the East Michigan Hospital at Pontiac, has accepted a position as assistant physician at the Oak Grove Sanitarium, Flint.

The L'Esperance medical bill passed the senate early in June.

Dr. George C. Chene, recently graduated from a service at St. Mary's Hospital, Detroit, has entered practice, being associated with Dr. P. M. Hickey, of Detroit.

Dr. James P. McMurrich has resigned the professorship of anatomy at the University of Michigan, and will go to the University of Toronto.

Dr. R. C. Olin, of Detroit, has been appointed a member of the U. S. board of pension examiners, to succeed Dr. J. F. Bennett, resigned.

The Board of Directors of the Wayne County Medical Society for the coming year are Drs. H. W. Yates, J. N. Bell, G. L. Kiefer, P. M. Hickey, Florence Huson. The section officers are: Medical, chairman, Dr. A. W. Ives, secretary, Dr. J. E. Davis; surgical, chairman, Dr. J. A. MacMillan, secretary, Dr. C. E. Simpson.

The new milk commission in Detroit, appointed by Dr. Carstens, president of Wayne County Medical Society, is as follows: Chairman, Dr. R. S. Rowland; members, Drs. C. E. Jennings, Charles Douglas, W. J. Wilson, Jr., E. H. Hayward, G. L. Kiefer, T. B. Cooley, H. M. Rich, N. Jenks.

In May there were 20 new cases of small-pox reported in Detroit.

Dr. Emil Amberg, of Detroit, is in Germany for a two months' rest.

The 35th annual meeting of the Northern Tri-State Medical Association was held in Detroit on July 9. The officers were: President, Dr. C. D. Aaron, Detroit; vice-president, Dr. Theo. F. Wood, Angola, Ind.; treasurer, Dr. J. A. Weitz, Montpelier, O.; secretary, Dr. Wm. F. Shumaker, Butler, Ind. The papers offered were as follows: President's address; "Recent Observations in the Physiology of Digestion," Charles D. Aaron, Detroit, Mich.; "Management of Infectious Diseases, with Special Reference to Measles and Scarlet Fever," I. J. Becknell, Goshen, Ind.; "Multiple Aneurism of the Internal Carotid," Chas. Stortz, South Bend, Ind.; "Proper Applications and Proper Dressings in the Treatment of Diseases of the Skin," Andrew P. Biddle, Detroit, Mich.; "The Opsonic Index in X-Ray Therapeutics," A. W. Crane, Kalamazoo, Mich.; "Basedow's Disease with Special Reference to Prevalence and Importance in the Lower Lake Region," J. P. Sawyer, Cleveland, O.; "The Present Status of Our Knowledge of Therapeutics," J. A. Weitz, Montpelier, O.; "Some Professional Fallacies," W. H. Baldwin, Quincy, Mich.; "Litholopaxy," F. W. Robbins, Detroit, Mich.; "Infectious Arthritis of Tonsillar Origin," P. M. Hickey, Detroit, Mich.; "A Critical Review of the Treatment of Elilepsy," C. J. Aldrich, Cleveland, O.; "Brain Tumor and Hysteria," C. B. Burr, Flint, Mich.; "Value of Laryngoscopy in the Management of

Asthma," E. L. Shurly, Detroit, Mich.; "The Management of Some Cases of Intestinal Obstruction," C. G. Darling, Ann Arbor, Mich.; "Migraine," G. W. Spohn, Elkhart, Ind.; Acute Hemorrhagic Pancreatis. Report of Case," H. A. Duemling, Fort Wayne, Ind.; "Thyroidectomy," with the report of a case, B. VanSweringen, Fort Wayne, Ind.; "A Plea for More Skillful Fitting of Glasses," A. E. Bulson, Fort Wayne, Ind.; illustrated lecture by Prof. A. H. Griffith on "Medicine and Surgery Among the Ancients." The reception committee were H. O. Walker, J. H. Carstens, L. J. Hirschman, A. D. Holmes, C. F. Kuhn, B. R. Shurly.

Dr. A. P. Ohlmacher has resigned from his duties in the biological laboratory of the Frederick Stearns Co., and taken up private practice, devoting his time wholly to the work of opsonic therapy, in offices at 301-3 Breitmeyer Building, Detroit.

Dr. Charles B. Macartney, first assistant physician at Oak Grove Sanatorium, Flint, has resigned and will sail for Europe August 23.

Dr. H. A. Haynes, for five years physician at the Michigan reformatory, has tendered his resignation, to take immediate effect. He has been appointed assistant superintendent at the home for the feeble-minded and epileptic at Lapeer and goes there August 1st.

Marriages

Dr. B. C. Le Vanseler, of St. Johns, to Miss Bessie Austin Wood, of Milford, June 27, at the bride's home.

Dr. Neil McVicar, of Lum, to Miss Vena Dahn, of Imlay City, on June 21, at the bride's home.

Dr. Robert Baird, of Howell, to Miss Lucy Ladd, of Lansing, June 12.

Dr. John Newell Holcomb to Miss Edith L. Smith, both of Grand Rapids, June 16.

Dr. Wilfrid Henry Haughey, of Battle Creek, to Miss Edythe Louisa Cowles, of Sand Lake, at St. Clara's church, Maple Valley, June 27.

Dr. S. E. Galbraith to Miss Mary A. Wisner, both of Pontiac, June 19.

Dr. Robert Bennett Dean, of Ann Arbor, to Miss Adelaide Leiper Martin, in Baltimore, May 22.

Dr. Burton D. Parker to Miss Tilla Louise Swales, both of Detroit, June 11.

Dr. William J. LeH. Lyster, assistant surgeon U. S. N., to Miss Alice C. Bissell, of Detroit, May 28.

Dr. Albert J. Drolett, of Lansing, to Miss Grace Lundy, of Detroit, June 1.

Dr. Edward E. Webber, of Marlette, to Miss C. Loise Kohler, of Rochester, N. Y., June 5.

Dr. Robert Underwood, of Detroit, to Miss Katherine Edgington, of Memphis, Tenn., June 5. 5.

Dr. John B. Donaldson, of Lorain, Ohio, to Miss Ida Kindler, of Saginaw, June 27.

Dr. Harold M. Doolittle to Miss Leda Stimson, both of Grand Rapids, June 4.

Dr. Henry L. Charles to Miss Cora I. Hurd, both of Paw Paw, May 29.

Dr. J. H. Crosby to Miss Fannie Cross, both of Otsego, June 17.

Deaths

Henry Tremain, M. D., of Ionia, died at his home on June 3, aged 59 years.

Carlos Fred Higgs, M. D., of Deerfield, died in Harper Hospital after an operation, June 17, aged 27.

Joseph Addison Burke, M. D., of New Lathrop, died at the Nichols Hospital in Battle Creek, from a general breakdown, May 2, aged 31.

John Mastenbroek, M. D., died at his home in Grand Haven, recently, aged 76.

Robert M. Ianson, M. D., died at his home in Ingalls, March 17, from pneumonia, aged 64.

Oliver La Crone, M. D., of Kalamazoo, died in Mercy Hospital, Chicago, July 18, as the result of an operation performed a week ago, aged 48 years.

Progress of Medical Science

MEDICINE

Conducted by

T. B. COOLEY, M. D.

Serum Diagnosis in Syphilis.—SCHUTZE reports his results with Wassermann's method of demonstrating antibodies in the spinal fluid of syphilitics. In eight tabetics, using every precaution as regards controls, etc., he was able to obtain a definite reaction. In four other cases, where syphilitic history was lacking, his results were negative.

He believes that this reaction would considerably enrich our means of diagnosis if it could be simplified to allow of more general use.—*Berl. Klin Wochenschr.*, 1907, p. 126.

Dysentery.—KRUSE concludes from observations during the last four years that in Germany dysentery is almost exclusively of the bacillary type, and that in this two forms are to be distinguished, true dysentery and pseudo-dysentery. Pseudo-dysentery as a rule does not present such typical symptoms, and its prognosis is better. The bacillus of true dysentery is as a rule only to be distinguished by its specific serum reaction. A number of different bacilli may give rise to pseudo-dysentery; KRUSE distinguishes six types. He considers it possible, also, that intestinal bacteria commonly harmless may have their virulence so increased as to give rise to dysenteric manifestations.—*Deutsch. Med. Woch.*, 1907, p. 292.

Psychosis in Gout.—MENDEL comes to the following conclusions: "In very rare cases after a severe attack of gout with fever there occurs an acute psychosis, which is accompanied by clouded consciousness and decided hallucinations and clinically is to be described as delirium hallucinatorium. Rarely an active psychosis replaces the gout attack, running a very short course. In exceedingly rare cases an attack of gout causes recovery from a psychosis which has existed unchanged for months or years.

The concurrence of psychosis and gout attacks is so uncommon that we are not justified in speaking of "gout-psychosis."—*Deutsch. Arch. fur Klin. Med.*, Vol. 89, p. 159.

Treatment of Severe Anemias by Blood Transfusion.—MORAWITZ treated six cases of anemia (one of severe anemia with leukemic blood picture, three of anemia gravis, one of moderately severe anemia, and one of severe aplastic anemia) with transfusions of 150-200 C. C. of defibrinized human blood. In two cases the immediate effects of the transfusion were alarming. In judging the final results, two cases were under observation for too short a period to draw definite conclusions. The case of aplastic anemia was uninfluenced. The case with leukemic blood-picture and two of Anemia Gravis showed remarkable improvement. In the first, 3 weeks arsenic treatment had given no results; the other two had seemed to offer a thoroughly unfavorable progress. The improvement did not at any time appear immediately after the transfusion, but always after a lapse of several days, so that any direct action of the injected blood is not to be assumed, even if the amount were not too small. The assumption is, that in certain cases of anemia the injection of foreign blood in some way or other stimulates the bone marrow, which will not react either to the stimulus of its own blood or to drugs, to increased activity.—*Muench. Med. Wochenschr.*, Apr., 1907.

Primary Intestinal Tuberculosis from Milk Infection.—SBIGER and JENSEN report two cases of certain milk infection encountered in the course of their work on primary intestinal tuberculosis. The first child, a 4 months old girl, had for 2½ months received daily a liter of raw milk. The autopsy showed unquestionable primary tuberculosis of the alimentary canal, and the bacilli found were in the highest degree virulent for cattle, producing the typical changes at the point of inoculation, as well as miliary tuberculosis. The second patient was a girl of 1½ years, of healthy parents. The father was a milk dealer, to whom for three years milk had been furnished from a highly infected dairy; in one cow there was udder-tuberculosis. Autopsy showed here also unquestionable primary intestinal tuberculosis with miliary tubercles in lungs and liver. The animal injections showed the same high degree of virulence.

The authors believe that a large number of the cases of primary intestinal tuberculosis in children are the result of infection with the bovine bacillus, while in adults the question remains undecided.—*Berl. Klin. Wochensch.*, 1907, pp. 93 and 134.

SURGERY

Conducted by

MAX BALLIN, M. D.

Gangrene of the Communicating Loop Between two Loops of Intestines in a Strangulated Hernia.—Strangulation of two loops of intestines with consecutive gangrene of the intestine between the two strangulated parts, called by some "retrograde strangulation"—has been observed in inguinal and femoral herniae, and about six such cases have been published. Most of the authors consider as reason for this retrograde necrosis strangulation of the mesenterial vessels going to the communicating loop. LAUENSTEIN shows by experiments on animals that this direct strangulation of these blood-vessels is only possible if the communicating loop is very short, about 8 cm., but in three cases recorded, the necrotic intestine was 25, 60 and 70 cm. respectively. It is very important after this communication to inspect most carefully the communicating intestinal part in case two strangulated loops are found in a hernia, as gangrene of that part is probable.—*Zentrallblatt fuer Chirurgie,* 1907, No. 27.

End Results of 376 Primary Operations of Carcinoma of the Breast at the Massachusetts General Hospital, between Jan. 1, 1894, and Jan. 1, 1904.—Out of 416 cases of primary operations for cancer of the breast at the Massachusetts General Hospital from 1894 to 1903 inclusive, 376 were traced to a conclusive end-result at an average period of eight years after operation. Sixty-four cases were alive and well and seven died without recurrence over three years after the operation. Counting in the operative mortality, there were 320 attempts at radical cure, 67 of which, or 20.9 per cent, were successful. During this same period palliative operations were performed on 56 patients (16 per cent) and 52 cases were discharged untreated. Cases in which the tumor was ulcerated, or was adherent to the skin or to the chest wall, and cases in which the axillary glands were palpably enlarged, gave notably less promising results than when these conditions did not exist. No case with palpably enlarged cancerous glands above the clavicle, and no case of cancer of both breasts was cured.

Medullary carcinoma was more grave than that of the scirrhus type, and adenocarcinoma and colloid were relatively of a far less malignant type. The duration of the disease, other than in the individual case, exerted little influence on prognosis.

Extensive operations with wide removal of skin gave the greatest freedom from local recurrence. Removal of the pectoralis minor appeared to be of slight significance. Incomplete operations on early cases yielded better results than extensive operations on cases which were well advanced.

Recurrence in the scar occurred in less than one half of the cases. Internal metastasis was most frequent in the lungs, mediastinum, in the axillary and supraclavicular glands, the liver and the spine.

Seventeen out of 88 cases, or 19 per cent of those passing the three-year limit without evidence of recurrence, showed recurrence later, and four cases developed recurrence six years or more after the operation.—ROBERT B. GREENOUGH, M. D.; CHANNING C. SIMMONS, M. D.; J. DELLINGER BARNEY, M. D., *Annals of Surgery, July,* 1907.

Cholecyst-Entero-Anastomosis Retrocolica.—There are only a few cases where the obstruction of the common duct cannot be overcome by ordinary surgical procedures, and anastomosis between gall bladder and intestines comes into consideration. BRENTANO recommends a new method for such anastomosis, namely, to bring the first loop of the jejunum upward, through a hole in the mesocolon and then make retrocolic the anastomosis between glall-bladder and jejunum; the method being an exact imitation of the well-known technique of retrocoloic gastro-enterostomy. The only point to be added, is that the usually overfilled gall bladder is first emptied by a fine trocar in order to facilitate handling of the organ. Clamps on the jejunal loop protect the field from soiling during suturing, and finally the place of anastomosis is anchored by three or four stitches on the sides of the hole in the mesolocon.—BRENTANO. *Zentrallblatt fuer Chirurgie,* 1907, No. 24.

Accessory Pancreas.—In KUESTER's clinic a woman 64 years old was operated upon for obstruction of the common bile duct. After removal of the obstructing gall stone, a flat, soft tumor of about an inch in circumference was discovered in the anterior wall of the pylorus. The tumor was excised. The patient died from peritonitis. The tumor was found to consist of typical pancreatic tissue, and had to be considered an accessory pancreatic gland as they were described before in literature.—*Deutsche Zeitschrift fuer Chirurgie,* Vol. 85, page 892.

GYNECOLOGY.

Conducted by

B. R. SCHENCK, M. D.

Gonorrhea in Women.—A recent issue of the Medical Record contains a valuable trio of papers on this subject.

STONE believes that the urethra in women rarely escapes infection, and that its entire length is usually involved, but the disease is milder and of shorter duration than in the male. Gonorrheal cystitis rarely occurs and the symtoms usually referred to it are due to urethritis. Stricture of the urethra has been seen by the author only once in twelve years' experience in a large clinic. Treatment should be water internally, instructions as to dirt and contagion, and hot applications to the genitals. Injections in the acute form should not be used. Gonorrheal vaginitis is rare except in young girls, and elderly women. The latter with a gonorrheal endometritis of long standing may show a profuse purulent discharge from the urethra with it. The ducts of Bartholin's glands are the portion that is affected, not the glands themselves, due to stagnation of discharges about the genitals. Examination for pus in these glands and the urethra will give valuable aid in the diagnosis of gonorrhea.

COE tells us that the intact mucosa of the vagina is rarely infected by the gonococcus. It may enter the cervix at once, or attack the glands of Bartholin, or vulva, but bladder infections are rare. The gonococci are aided by their tonic products in producing the changes seen. Latent gonorrhea is frequent. The muscular walls of the uterus may be invaded and lymphatic infection of it occasionally occurs. Gonorrheal cellulitis and rheumatism are rare in the woman. The stroma of the ovary is probably not primarily affected by way of the lymph channels. Acute oöphoritis is due to mixed infection, all sorts of micro-organisms being found in the secretions. Irrigation and drainage are generally not needed in tube cases, since the pus is sterile, or the infected point is away from the penetration of the injection. Gonorrheal infection when seen by the surgeon is generally of long standing. Appendicitis is often combined with tuboovarian disease. As to cure, under rest and hot douches with tampons a symptomatic cure may be obtained, although restoration of tissues to the normal is impossible. Sterility is apt to be the fault of azoöspermia in the male.

EDGAR says that his observation leads him to view gonorrheal infection in the pregnant woman in an optimistic light. Women who contract gonorrhea in pregnancy do not necessarily suffer as far as pregancy is concerned. Its results are seen at the time of labor and the puerperium in a gonorrheal ophthalmia and infection of the uterus, tubes, and pelvic peritoneum and are most serious. The vaginal secretions have no bactericidal effect on the gonococcus.—*Medical Record,* April 27, 1907.

Heart Disease in Relation to Pregnancy.—While it is probable that the heart must do increased work during pregnancy, this, according to BLACKER, has not been proved. It is an old idea that the heart, during pregnancy, normally hypertrophies, but this is not proved for all cases. In some cases, uniform hypertrophy has been demonstrated, in others there have been found hypertrophy of the left ventricle and dilatation of the right heart. In some healthy women, neither hypertrophy nor dilatation occurs. In pregnancy, there are no characteristic changes in the pulse.

When pregnancy is complicated by heart disease, one must guard against the possible occurrence of cardiac failure, and the patient be carefully watched. When, following delivery, there are evidences of over-distention of the right heart, post partum hemorrhage should be encouraged or even venesection resorted to.

Should a woman with a heart lesion be permitted to marry? BLACKER takes a moderate view of this question, because he believes that the majority of these patients pass through pregnancy and parturition safely. When the lesion is compensated, the patient may marry. Cardiac failure will probably sooner or later occur, whether or not the patient undergoes a pregnancy. It is true that a pregnancy may precipitate this failure, but the author doubts whether the risk is sufficiently great to justify the physician in forbidding marriage.—*Br. Med. Jour.,* May 25, 1907.

PHARMACOLOGY AND THERAPEUTICS

Conducted by

H. A. FREUND, M. D.

Unusual Case of Drug-rash from Chloral.—Drug rashes are usually traceable to one of two sources: Either the patient has an idiosyncrasy or the exanthem has followed the prolonged use or an enormous dose of the drug. In psychiatric clinics large quantities of hypnotics are frequently administered to produce quiet. GREGOR reports a case of paranoia with marked motor symptoms, who in addition to therapeutic baths was given at different times large doses of veronal, extract opii, chloral, proponal, isopral, trional and morphine. After the administration of two grams of chloral two days in succession, the patient developed an exanthem on his right forearm which rapidly spread over his body. The rash was dark red, consisting of maculo-papules which became confluent in some areas forming large patches. Small petechia developed about the legs. Blebs appeared about the face and neck. The exanthem began to fade in about seven days with marked desquamation, the skin coming off in large casts in places. In addition the patient developed a marked temperature which rose at one time to 104. He had a severe conjunctivitis together with a hemorrhagic bronchitis which persisted for some time after the disappearance of the rash.—*Muenchener Medizinsche Wochenschrift,* April 23, 1907.

Trymol in the Treatment of Goitre.—MCCARRISON has met with good results in the treatment of endemic goiter by the administration of thymol. He has lately reported twenty-five cases successfully treated with this drug and in a few instances noted a disappearance of the enlargement in seventeen days. He recommends giving thymol twice a week, 1.8 gram each time, followed by a cathartic in the evening. During the intervening days 0.6 gram is given morning and evening. He continues administration of the drug till the goiter has disappeared. He claims to have seen improvement in all his cases.—*Medical Record,* June 22, 1907, p. 1037.

Tea, Coffee and Tobacco in Diseases of the Stomach.—It cannot be denied that the use of tea, coffee and tobacco has certain influences upon the gastrointestinal tract in the Neuroses. CRÄMER thinks it advisable to limit, if not forbid, their use in all gastric conditions. In hyperacidity only very weak coffee should be drunk because of its influence in increasing secretion. Tea might better replace it. Smoking should be interdicted and coffee allowed because of its stimulating effect upon the flow of gastric juice. Smoking should be prohibited in these cases.

In motor insufficiency smoking should also be reduced or completely stopped if followed by an uncomfortable feeling in the stomach. The effects of tea and coffee on the motor power are not known and probably have little influence.—*Muenchener Medizinische Wochenschrift,* May 14, 1907.

Bismuth Subnitrate in the Treatment of Gastropathies and Enteropathies.—HAYEM has been using bismuth subnitrate in digestive disorders, claiming it to be the most harmless of all the metals in the treatment of gastrointestinal diseases. He has not met with success in employing it in cases of gastralgia, ulcer, and hyperacidity. In the latter group of cases its superiority to sodium bicarbonate is marked in that it relieves the pain and has no tendency to stimulate secretion later. HAYEM does not find the administration of the bismuth subnitrate contraindicated in cases of constipation associated with hyperchlorhydria, for in small doses it seems to exert a laxative effect. He uses 15 to 20 grammes in a half glassful of water. He finds it useful especially in cases of muco-membranous enteritis that are ofttimes associated with constipation. In these it also exerts an astringent effect.—*La Clinique,* May, 1907.

Gelatin Injections in Cancer.—HAUER in a severe case of hemorrhage from a cancer, gave several subcutaneous injections of gelatin. A slight febrile reaction was first noted, but later the hemorrhage ceased and the patient's condition improved.—*Journal de Médicine de Bordeaux,* April, 1907.

PEDIATRICS

Conducted by

R. S. ROWLAND, M. D.

The Prevention of the Acute Intestinal Diseases of Summer.—The following practical suggestions are abstracts from Kerley's recent work on "The Treatment of the Diseases of Children."

He says that the potent etiologic factors in summer diarrhea are unfavorable climate and unfavorable environment. In the class which furnishes the largest mortality, climate cannot be changed for a sufficient number to exert any great influence on the general mortality. Through education the environment may be radically improved, but it cannot be changed. Other than climate and environment, the determining factors among all classes are: First, a disordered gastro-enteric tract; second, infected food; third, faulty feeding methods; fourth, an absence of appreciation on the part of the parents and physicians of the fact that an attack of diarrhea or vomiting, or even a green undigested stool, occurring in an infant under 18 months of age during the hot weather, is to be looked upon as a serious matter requiring prompt attention.

The principal immediate cause is an infection of the gastro-enteric contents by bacteria. The infecting elements are usually introduced by means of contaminated food and unclean feeding apparatus.

KERLEY observes that the majority of the infant population in a large city are fed on milk, which, for them, is not a safe food; and it is among these infants that the large mortality occurs and will continue in spite of sea-shore visits, daily excursions, and the efforts of the summer corps of Health Department physicians. It will continue until every large municipality shall establish milk depots and ice stations where safe milk, and ice to keep it safe, may be obtained at normal cost, or free, if the parents are unable to pay for it. A visiting physician for these people is not absolutely necessary, nor is a trained nurse, as both are expensive luxuries; but what is necessary is the appointment, for a given district, of women with just plain common sense to teach the uninformed mothers, who are doing their best according to the lights they have, the simple details of the infant care, easily carried out when they know how but so rarely done because they do not know how.

At the established dispensaries there is a surprisingly low summer diarrhea mortality because the mothers have been taught how to feed and care for their children all the year around. They are taught the value of fresh air, the use of boiled water as a beverage, and the benefits of frequent spongings on hot days. Both private and dispensary mothers whose children are under the writer's care are given pamphlets of instruction and also oral teaching, bearing on these points, and particularly as to the care of the feeding bottle and milk. In case special articles of diet are to be given, they are taught how to prepare them.

Written directions are always given covering these points; nothing is left to the memory. Each mother and nurse has it impressed upon her that she must wash her hands in soap and water before touching the baby's food or feeding apparatus for any purpose, and that there must be a covered vessel in which soiled napkins are to be kept until washed. At the first sign of intestinal derangement, regardless of the season of the year, they are taught to stop the milk at once, to give instead a cereal water, such as barley water or rice water, and a dose of castor oil. It is impressed upon them that in winter as well as summer, a green watery stool means that the baby is ill and needs treatment. When the mother learns the above lesson for December, January, and March she will not forget it in July. Furthermore, as a result of the immediate correction of a child's digestive disorder during the winter months, we have a much less fertile field for pathogenic bacteria during the summer.

Comparatively few cases of intestinal disease have pronounced toxic symptoms at the onset. At first there are evidences of a mild infection only. There may be no vomiting, with several green watery stools, with a slight elevation of temperature, or the symptoms may be still more mild—only one or two loose green defecations. Prompt treatment at this time, even in a crowded tenement, usually means prompt recovery. When the treatment is delayed, when the administration of milk is continued, severe toxic symptoms and intestinal lesions are almost invariably the result.

It will be seen from the foregoing that the suggestions offered are all included under the one general heading of Education. The mother must be educated how to care for the baby, how to clothe him and bathe him during the summer. It must be impressed upon her that he needs all the fresh air available. She must be educated to the point of knowing what to do at the first sign of threatened disease. Municipalities must be educated to appreciate their responsibility as factors, negative or positive, in the summer mortality. The farmer must be educated as to how to produce safe milk, and the consumer must be educated to appreciate its value and pay for it. Above all others, the physician must be educated along these lines so as to be able to teach the mother how to do the right thing as to the care of her children all the year round.—*Treatment of the Diseases of Children*, by CHARLES GLINON KERLEY, M. D. (W. B. Saunders Company, 1907.)

OPHTHALMOLOGY

Conducted by

W. R. PARKER, M. D.

Avoidable Diseases of the Eye.—PROF. C. HESS, of Wuerzburg, after imagining an Utopian country in which every oculist is entrusted with the responsibility of looking after a certain part of the community, presents a picture of what might be accomplished.

Even the first step in life brings with it dangers of infection. Pneumococci, staphylococci, streptococci, gonococci, etc., may during parturition get into the conjunctival sac; and lead to conditions which if not properly treated might lead to blindness. Ophthalmia neonatorum has been reduced from 9 per cent to below 1 per cent by the employment of the Credé method. Ophthalmia neonatorum is responsible for 20 per cent of the cases of blindness in the asylums for the blind.

The oculist frequently meets with conjunctival and corneal troubles of an eczematous character occurring among children of the poorer classes with resulting opacities of the cornea and serious damage to the eyes, which might have been obviated if the cases had been seen in the first stages of the disease. Serpiginous ulcer of the cornea, usually occurring in the poorer classes, is frequently neglected. A simple epiphora should not be overlooked, but its cause sought for. So far as disease of the iris is concerned, we have to deal principally with the recurrent form of iritis. This not being painful, is usually neglected; consequently when the oculist is ultimately consulted the iris is adherent to the lens, the pupil covered with exudative material and vision is permanently injured or destroyed by secondary glaucoma. Even these patients might be saved from blindness if properly treated.

The same applies to choroiditis, providing the patients come to us at the beginning of their troubles and before the foveal region is hopelessly destroyed by the disease. Chronic glaucoma may be accompanied by very little pain, and, therefore, patients do not seek medical aid until vision is entirely destroyed. In such cases an operation, if performed early, would probably prevent blindness in many cases. The majority of diseases of the optic nerve—atrophy, hemianopsia, etc.—are at the present time absolutely beyond our control. On the other hand, atrophy of the optic nerve due to alcohol and nicotine poisoning is within the sphere of prevention. We can prevent serious injury to the eye by the correction of errors of refraction. A moderate degree of hypermetropia is in early youth often the cause of convergent squint, which, if left to itself, will lead in the squinting eye to irreparably defective vision. Within the last ten years it has been generally recognized that squint may be cured and vision saved by prescribing proper lenses at the earliest date possible. Regarding myopia and its correction, some oculists claim it is better to prescribe weak lenses, while others think it better to do without lenses altogether. Experience and statistics have proved the fallacy of either of these theories. The early prescribing of lenses which fully correct the existing myopia checks its progress in most instances and tends to prevent serious consequences, such as choroiditis and retinal detachment. Blindness in both eyes, due to sympathetic ophthalmia, can in many instances be prevented.

The dangers and sequelae arising from trachoma might be reduced to a minimum if treatment were begun early. Retinitis pigmentosa is in more than 60 per cent of all cases due to inter-marrying of relatives, which if prevented would save a good many from blindness. The same applies to legislation forbidding marriages where a high degree of myopia exists on both sides. The significance of diseases of the eyes and congenital syphilis is so well known that further comment is unnecessary; in any case the eye troubles are of secondary importance. The same applies to xerosis and keratomalacia in marasmic children, although suitable food and care can accomplish a good deal in this direction.

Many eyes are lost through accidents due to criminal negligence; toy pistols, fire crackers, toy guns, throwing of stones among children, allowing children to play with scissors, etc.

"Furthermore, it is interesting to note that in Austria, where compulsory vaccination does not exist, 20 to 30 per cent of the inmates of the asylums of the blind contracted blindness through smallpox. In Germany, where vaccination is compulsory, only one per cent of the inmates of blind asylums are blind from smallpox; certainly an argument that even the most obstinate adversary of vaccination must accept. The number of blind people in Germany is about 30,000; on the strength of these statistics at least one-half of the total cases of blindness could have been absolutely prevented."—*Ophthalmic Review*, May, 1907.

OTOLOGY.

Conducted by

EMIL AMBERG, M. D.

The Value of v. Stein's Symptom in the Diagnosis of Labyrinthine Suppuration.—EAGLETON states that out of seventeen consecutive cases of tympanic exenteration, for chronic suppuration, seven, or, 41 per cent, were found to have fistulae leading into the labyrinth, while three were not yet operated upon presented symtoms warranting such a diagnosis. Of the seven cases, two had disease of the cochlea and semicircular canals, the remaining five being of the semicircular canals alone. Von Stein in 1904 called attention to the presence of a peculiar inability of patients suffering from labyrinthine suppuration to execute certain delicate coördinative movements. Thus, with the feet placed together, especially when the eyes are closed, such patients cannot repeatedly jump with the degree of assurance of a normal person, but are compelled to catch themselves after one or two jumps, by throwing one foot out. In some cases this is so marked that they are unable so to jump even with the eyes open. This symptom was present in all of the eight cases of labyrinthine suppuration reported by him, in which subsequent operation verified the diagnosis. EAGLETON has applied the Von Stein test on all his private, and many dispensary cases suffering from chronic otitis, besides many perfectly normal persons, so that he observed between two and three hundred persons altogether. He draws the following conclusions: First, a normal person not suffering from disease of the labyrinth, suppurative or otherwise, jumps with his eyes closed with a degree of assurance not perhaps on the first attempt, but surely on the second or third. Second, in applying the test, age must be considered, as past middle life normal persons while jumping slowly but accurately for a few feet, soon tire and so lose the accuracy of the movement, probably from exhaustion. Third, the symptom has a value in chronic non-suppurative aural disease in which the labyrinth has become affected. Fourth, the symptom is very valuable in labyrinthine suppuration, especially in the chronic suppurations of the semicircular canals, and in such may be the only symptom of the condition. It was present in at least five of his cases and probably in all, had it been sought for prior to the operation. It would appear that the symptoms of suppuration of the labyrinth, where the semicircular canals at least are involved, may be divided into three stages: An active stage, or stage of irritation, with dizziness, with great impairment of co-ordinate dynamic movements, associated perhaps with nausea, vomiting and nystagmus; second, a paralytic or latent stage, in which all symptoms are absent excepting the inability to perform with closed eyes certain delicate co-ordinate movements requiring both a correct orientation and accurate coordination; and third, even this may disappear, especially in young persons, after drainage of the labyrinth and perhaps without it.—*Archives of Otology,* June, 1907.

Indications for Opening a Purulently Affected Labyrinth.—HINSBERG says that the operation, to his mind, is always necessary when an exact functional examination (deafness and symptoms of irritation or defect of the vestibular apparatus) and the conditions found on exposing the middle ear cavities show us that extensive disease of the labyrinth is present. If the functional examination and the operation point to a circumscribed disease of the semicircular canal, or if at operation a labyrinth fistula cannot be definitely proved, he thinks it is best at first to wait, then to operate secondarily if the symptoms of irritation which were present before the operation do not quickly disappear, or, if these should appear first after the operation on the middle ear. Moreover, the suspicion that an endo-cranial complication is present or threatens indicates the opening of the diseased labyrinth. It is perfectly reasonable to say that during the operation a circumscribed suppuration has been allowed to extend, through careless use of the probe, concussion from the chisel, retention from too firm packing, etc. It is very important to watch very carefully after the operation a patient who presents an apparently isolated fistula of the semicircular canal at the time of exposing the middle ear cavities, so that symptoms pointing to an extension in the inner ear shall not be overlooked. As soon as he is assured that the incapsulated suppuration has become extensive, the broad exposure of the labyrinth cavities must be undertaken on account of the danger of a retention of pus in the interior of the labyrinth. The cases with the formation of sequestra in the labyrinth are to be regarded, for indications to operate, as diffuse labyrinth suppurations. The conditions, however, are quite different if the sequestrum is not freely movable. Forced loosening has caused von Stein in many cases injury to the carotoid artery. HINSBERG states that it must not be forgotten that a meningitis is always to be feared in these cases, a condition which makes the decision difficult.—*Archives of Otology,* June, 1907.